# Spectra

ARMY TEAM C4ISR

## The Army Imperatives:

*SUSTAIN*
*PREPARE*
*RESET*
*TRANSFORM*

*One Vision, One Mission –*

**SUSTAIN:** Covenants with Soldiers, Families, Army Communities, 'Unknown Covenant'

**PREPARE:** Team C4ISR's New Training initiatives, Depot Extends Reach

**RESET:** Unit Set Fielding Process gathering momentum, New Name in Repair: CEER-T

**TRANSFORM:** UAV's, Night Vision, Improvements in Maintenance

*The Warfighter.*

## FROM THE COMMANDER

**MG Dennis L. Via**
*Commanding General, CECOM Life Cycle Management Command*

# Army Team C4ISR addresses the Army's Imperatives: SUSTAIN, PREPARE, RESET and TRANSFORM

During my recent trip to the U.S. Central Command theater in Iraq and Afghanistan, I spoke with many senior leaders and commanders who emphasized to me that the C4ISR (command, control, communications, computers, intelligence, surveillance and reconnaissance) systems and capabilities our command team is delivering to them, and the sustainment of these systems, are essential to their mission success. This same theme was emphasized by the Chief of Staff of the Army, General George W. Casey, Jr., when he visited Fort Monmouth in November 2008. It is a theme that has been repeated to me whenever and wherever I've met with officers, NCOs and Soldiers in my travels throughout the past year.

Looking toward the future, the Army's Strategic Imperatives—Sustain, Prepare, Reset and Transform— will continue to be our command imperatives; and our execution of those imperatives is the focus of this second issue of Spectra Magazine.

The first of these imperatives – **Sustain** - refers to sustaining our Army's Covenants with Soldiers, families and civilian communities worldwide and ensuring that the families of those who are deployed are well cared for with all of their needs addressed.

Last September, I joined Col. Stephen M. Christian, our Fort Monmouth Garrison Commander, and civilian leaders of our neighboring communities in signing an Army Community Covenant. The Covenant honored the long-standing partnership between our civilian neighbors and our installation that has stood for over nine decades, and pledged that we will continue to work closely together to provide the best possible services and support for our Soldiers and civilians.

The second Army imperative – **Prepare** - means a continuation of our efforts to help prepare our Soldiers for success in the Global War against Terror. This is an area in which the CECOM Life Cycle Management Command continues to excel as we work tirelessly in our Army Team C4ISR missions in support of our nation's War fighters—

accelerating the evolution of technology and fielding and sustaining advanced systems, equipment and capabilities.

The third imperative – **Reset** - emphasizes the need to ensure Army units are ready for future deployments and other contingencies. Since 2003, Army equipment has been used in harsh and demanding environments. Through our superb sustainment and reset teams consisting of Tobyhanna Army Depot and Forward Repair Activity personnel and our Logistics Assistance Representatives, we've assumed the lead role in fixing, replacing and upgrading C4ISR equipment across the Army. Our success in this mission has brought significant praise to our command and C4ISR Community— including General Casey's expression of gratitude during his recent visit to our command headquarters.

The fourth and final imperative – **Transform** - means the integration of new concepts and organizational structures, as well as technologies, to build a much more capable and prepared Army.

Part of the Army's transformation involves DoD Base Realignment and Closure (BRAC) initiatives including the relocation of the Army Team C4ISR mission to Aberdeen Proving Ground (APG), Md., a major challenge we will successfully meet together over the next two years. The exterior of the first nine buildings being constructed as part of Phase I of our Army Team C4ISR campus at APG are scheduled for completion in March—a symbolic milestone of a new beginning for the Army and our mission and a once-in-a- generation investment in a C4ISR Center of Excellence that will be unequalled anywhere in the world.

I invite you to enjoy this issue of Spectra Magazine and its descriptions of the many superb programs and missions of Army Team C4ISR in support of the strategic imperatives of sustaining, preparing, resetting and transforming our nation's Army. After six years of war, the C4ISR systems, capabilities, and support that we provide remain critical for mission success for our warfighters. As we move forward, our focus remains unchanged — *One Vision, One Mission – The Warfighter. Army Strong!*

# ARMY TEAM C4ISR IMPERATIVES

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Photo from www.army.mil

*Army Staff Sgt. Jenkins briefs Army Chief of Staff, Gen. George W. Casey Jr. about technologies being incorporated into the current war against terrorism at Fort Monmouth, N.J., on Nov. 5, 2008.*

### SUSTAIN

### PREPARE

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#### C4ISR News

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Spectra n. a plural of spectrum. 1. an array of entities, as light waves or particles, ordered in accordance with the magnitudes of a common physical property. 2. A broad range of varied but related ideas or objects that form a continuous series or sequence.

From the Random House College Dictionary, First Edition

IMPERATIVES

*Chief of Staff of the Army GEN George W. Casey, Jr. (second from right) and his wife, Sheila Casey (right) listen to MG Dennis L. Via as he discusses a scale model of the Army Team C4ISR campus under construction at Aberdeen Proving Ground, Md., as Linda Via looks on.*

# In visit to CECOM LCMC, GEN Casey discusses the four Army Imperatives

**By Timothy Rider and Henry Kearney**
*Spectra Editors*

In a visit by Chief of Staff of the Army GEN George W. Casey, Jr., and his wife, Sheila, to Fort Monmouth Nov. 5, the Army's senior-ranking general officer talked to Fort Monmouth leaders, its workforce and future officers about the Army's four imperatives to "restore balance" now and for the future: Sustain, Prepare, Reset and Transform.

Following a welcome by the CECOM Life Cycle Management Command (LCMC) Commanding General MG Dennis L. Via, and other senior leaders, a command overview and a Base Realignment and Closure (BRAC) implementa-

tion briefing, GEN Casey addressed approximately 500 Fort Monmouth personnel at Pruden Auditorium.

Video teleconferencing made the presentation available to numerous members of Army Team Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) personnel in Fort Monmouth's Myer Center main auditorium, the McAfee Center, Tobyhanna Army Depot, Pa., Information Systems Engineering Command, Fort Huachuca, Ariz., the Central Technical Support Facility, Fort Hood, Texas, and at Aberdeen Proving Ground, Md.

Sheila Casey visited with senior spouses and hosted a family forum during the visit where they exchanged ideas on Army family support.

Topics of the discussion included supporting special needs children, extending Montgomery G.I. Bill benefits to military family members and qualifying for in-state tuition for family members stationed for tours at Army installations.

Following his remarks, GEN Casey also discussed the four Army imperatives with U.S. Military Academy Preparatory School (USMAPS) cadet candidates in an address in the USMAPS Auditorium. He took questions from audience members at both locations.

GEN Casey explained that shortly after he began his job as Chief of Staff of the Army in April 2007, the development of the four imperatives occurred after hearing "chatter" about a hollow Army that was not ready.

He said he went around the world with his

wife talking to Soldiers, leaders and families. "What became clear to me is this is a hugely resilient, committed professional combat-seasoned force. And the evidence of that is what we're seeing in Iraq and Afghanistan," he said.

However, GEN Casey said, "It was also clear to me that we were being stretched to operate at a pace that we can't sustain either from the perspective of sustaining our Soldiers and families and civilians, or from rebuilding the strategic flexibility to do other things."

Having to find the right words to talk about the condition of the Army publicly, "I started saying we're out of balance. We're not broken. We're not hollow, we're out of balance."

GEN Casey explained that it would, "take every bit of four years," to put the Army back in balance.

The first imperative, Sustain, refers to sustaining Soldiers, families and civilians "They are the heart and soul of the Army. We restated our commitment to families, we doubled the amount of money we put toward Soldier and family programs, and hopefully you're starting to see some of the impact of that," GEN Casey said.

The second imperative, Prepare, continues to prepare Soldiers for success in the current conflict.

"You all contribute every day with the work you're doing here. I went to Iraq in June of 2004 and left in February of 2007, and I will tell you that the forces that we're sending to Iraq and Afghanistan have improved in leaps and bounds in terms of the [Army Team C4ISR] equipment that they're bringing with them," GEN Casey said.

GEN Casey explained that the third imperative, Reset, refers to bringing Soldiers and units back to a capability that allows them to begin preparing for their next missions quickly and efficiently.

The first element is equipping, "And I'm very impressed with what I see CECOM doing here getting out to the units and putting a team out there that fixes their communications equipment. It gets rave reviews every place I go around the Army, so good for you on that."

Also in terms of resetting the force, GEN Casey said, "We are working to put every returning unit in the Army on a six-month unit reset model, because we are moving away from the garrison-based Army that lived to train as we did before Sept. 11." GEN Casey then likened the Army to a naval aircraft carrier returning to dry dock for six months.

"Our expectation is that the same kind of thing goes on with our units – they establish property accountability, they put Soldiers on leave, they do changes of command, they start some new equipment fielding, and they send their non-commissioned officers off to their professional education."

> **"I started saying we're out of balance. We're not broken. We're not hollow, we're out of balance."**
> *Army Chief of Staff, GEN George W. Casey, Jr.*

Photo by Russ Meseroll

GEN Casey described the final imperative, Transform, using how the Army prepared for dealing with the Cold War threat from the Soviet Union and Warsaw Pact nations during the 1970s and 1980s. The Army will now have to prepare to operate across a full spectrum — from major conventional operations to irregular warfare to peacetime engagements.

"We can't optimize for one or the other. We have to build a force that is capable of effective operations across the spectrum. This is a much harder task for the Army. Fortunately, we have a combat-seasoned, experienced force that's capable of dealing with this."

One aspect of the imperative, Transform, touched an issue near and dear to the hearts of the Fort Monmouth audience — Base Realignment and Closure (BRAC). GEN Casey placed BRAC in the context of larger realignment efforts being undertaken by the Army, including the return of forces from Europe and Korea, the growth of the Army by 75,000 Soldiers and the re-basing associated with those actions.

"We will move about 380,000 Soldiers and families in the next three years. That's the largest re-basing of the Army that anybody can remember, probably since World War II."

"It's an opportunity to reset ourselves to be the expeditionary force that we want. I was very pleased to see the efforts that have been going on here for the move, and to mitigate the impacts on people because that's very important to all of us."

In the address to more than 230 cadet candidates and their USMAPS instructors, cadre and leadership, GEN Casey praised the service of the men and women serving in today's Army.

GEN Casey noted that last year, approximately 290,000 men and women enlisted or re-enlisted in the Army, including the Army National Guard and Reserve.

"Every one of those men and women, just like you, enlisted knowing their nation was at war and that they would go to war [or] lead Soldiers into war," he said.

"That speaks an awful lot about your character and the character of the men and women serving in the United States Army today," GEN Casey told the cadet candidates.

GEN Casey noted that last Memorial Day he laid a wreath at Arlington National Cemetery and spoke at the Vietnam Veterans Memorial and he and his wife also visited the Korean War and World War II Veterans Memorials.

"I was struck by two things," he said "By the scope of the loss represented, but I was also struck by how lucky we are as a nation to have generation after generation of men and women who are willing to serve.

"And you represent another generation that is willing to serve our nation and protect our values and ideals from the threat of extremist terror."

Also during GEN Casey's visit, he received several presentations and demonstrations of Army Team C4ISR technologies including Blue Force Tracking, electro-optic/infrared radars and other systems which support the Warfighter.

The visit provided the CECOM LCMC an opportunity to highlight its numerous accomplishments supporting America's Warfighters.

It had been almost 10 years since Fort Monmouth was honored by a visit by a Chief of Staff of the Army.

**SUSTAIN**

# ARMY IMPERATIVE: SUSTAIN

*Sustain* ensures our Soldiers and their Families have the quality of life they deserve and that we recruit and sustain a high quality force.

*"They are the heart and soul of the Army. We restated our commitment to families, we doubled the amount of money we put toward Soldier and family programs, and hopefully you're starting to see some of the impact of that."*

Army Chief of Staff, GEN George W. Casey, Jr. to Team C4ISR members at Fort Monmouth's Pruden Auditorium

Photo from www.army.mil

# Fort, communities, join in covenant

**By Louise T. Cooper**
*Fort Monmouth Correspondent*

Sunny blue skies and 70 degree weather were the perfect backdrop for the Fort Monmouth Army Community Covenant Signing ceremony at Eatontown Borough's Wampum Park Sept. 24.

More than 180 people attended the ceremony including Soldiers stationed here, Army civilians, elected officials, community leaders, families and friends.

The event, which was hosted by Eatontown Mayor Gerald Tarantolo, was a celebration of the Army's Community Covenant designed to develop and foster state and community partnerships with the Army in improving the quality of life for Soldiers and their families.

"You've joined us every year in celebrating such events as Armed Forces Day, Memorial Day, Veterans Day, and so many others. And when we've needed you in times of celebration and in times of crisis, you've been there for us and for our Soldiers and their families," COL Stephen Christian, Garrison commander, told the assembled audience.

"By signing this covenant, our mayors and community leaders are affirming the close partnership between their communities and Fort Monmouth, a partnership that has existed for more than 90 years and has stood the test of time," said MG Dennis L. Via.

Via, Christian, Mayor Tarantolo, COL Gale Harrington and her husband, Will, and their children; Christine, 9, and Steven, 11, signed the covenant.

New Jersey Civilian Aide to the Secretary of the Army Robert McGuire, several of the local mayors, and other local officials also signed the document.

Prior to the event, local mayors pledged their support to Fort Monmouth's Soldiers and their families through a series of initiatives called "Best Practices."

Some of the Best Practices included waiving fees for Soldiers' children to participate in community sponsored park and recreation activities, local and county public beaches, boat ramp access and free admission to high school athletic events.

Other state level Best Practices include free or reduced price transportation on New Jersey's mass transit system within the state and New York and reduced or free admission to attend local professional sporting events.

The Borough of Sea Bright also passed a resolution exempting active duty members of the Armed Forces and their families from miscellaneous fees, licenses and permits.

The mayor of Eatontown announced a special financial sponsorship registration program for military dependents who participate in Eatontown youth sports programs.

An initial donation of $1,400 was contributed by the borough's business community. The borough also recognized the Fort Monmouth commander as a member of the Two Rivers Council of Mayors and as a liaison to the Eatontown Board of Education.

At the state level, professional associations together raised $75,000 last year and $156,000 this year for Fisher House supporting America's military in their time of need.

Photo by Angela Squicciarini

*Eatontown Borough Mayor, Gerald J. Tarantolo; CECOM LCMC Commanding General, MG Dennis L. Via; U.S Army Garrison Fort Monmouth Commander, COL Stephen M. Christian, and Project Manager for Defense Communications and Army Transmission Systems, COL Gale Harrington, hold up the Army Community Covenant for the audience to view after signing the document.*

# Mayor looks back on 'Unknown Covenant'

**By Louise T. Cooper**
*Fort Monmouth Correspondent*

During the Army Community Covenant Signing ceremony in September, Eatontown Mayor Gerald J. Tarantolo recalled delivering cooked food and freshly baked Italian bread to Soldiers and their Families who rented apartments over his family's bakery during the 1940s, and World War II. He remembered the appreciative looks from the families. "Mom knew they missed being with their families and they became a part of our family."

Tarantolo said he recalled the events vividly because when he was 9-years old, he became the family go-fer. He began helping in the family business by sweeping, dusting, and restocking the shelves for his mother who managed the grocery store and delivering bread for his dad who managed the bakery. The family owned businesses were located next door to each other on south Broadway, Long Branch, about a half block from the ocean which today

is the parking lot of the Ocean Place Hotel.

The Tarantolo family lived next door to the military families in the apartments over the grocery store where his mother cooked in the little kitchen in the back of the shop in case a customer would ring the buzzer and want help.

"She would cook a big meal and we would share it with the Fort Monmouth families," he said. "When they shopped in the grocery store and needed an advance, my mother extended credit to them and she wrote it down in a green book. They always paid her when they got paid.

"Our family always felt you should reach out and help. We had a deep respect for the military especially during the war years. The definition of a covenant is what I had as a kid – an agreement with and respect for military personnel. We had an "unknown covenant," an agreement between the Tarantolo family and the Soldiers and their Families living above our family's bakery. Today I make every effort to attend events on Fort Monmouth. As long as the post is here we will have this relationship."



Photo Courtesy of Gerald Tarontolo

*Joseph, 8, (left) and Gerald J. Tarantolo, 14, worked in the family's grocery store during the late 1940s. When Gerald was 9, he was old enough to organize the macaroni boxes in racks on the bottom wooden shelf. He stocked and straightened all the food items lining the upper shelves along the wall behind the counter.*

**SUSTAIN**

# Avionics maintainers get new test gear

**By Robert Mansfield, Jeffrey Spangher, and Ronald Cialino**
*Professional Briefers*

A concerted effort by CECOM LCMC and several contractors has resulted in improved test capability for repair and maintenance of critical avionics equipment. Sometimes referred to as the Common Avionics Test Bench, it is a collection of modern test equipment used at Active Army and National Guard Bureau (NGB) avionics repair facilities to more effectively perform test and repair of critical avionics items. This project is leading the way to improved readiness for avionics systems, reduced logistics footprint, and significant cost savings, as older test equipment is replaced and consolidated with a smaller suite of test capability.

In Fiscal Year 2005, Department of the Army approved the Army Aviation Logistics Transformation. One facet of this plan involved the NGB Aviation Classification Repair Activity Depots (AVCRADs), which were tasked to provide in-theater and stateside surge avionics repair support during times of conflict. In order to accomplish this mission, the AVCRADs needed to be equipped with modern test equipment providing greater capabilities than the "hand-me-down" older test equipment then in use. The AVCRADs would now be required to repair equipment that they previously would not have acquired until the Active Army had cascaded these older items to the National Guard. In addition to providing this increased capability, a goal was to also reduce the logistics footprint.

Since Fiscal Year 2005, over $16 million has been provided by AMC and other funding sources to satisfy the modernization requirement. Through contracts with various suppliers, testers from four manufacturers were procured to test several avionics radios, flight control computers, and Enhanced GPS Inertial systems.

As an example of one of the more successful efforts in this initiative, we realized the ability to improve the Active Army Aviation Intermediate Maintenance (AVIM) and AVCRAD capabilities by using an existing test set: the AN/GRM-122 SINCGARS tester.

The GRM-122 test set had diagnosed only one type of radio – the SINCGARS. After a proposed upgrade was initiated, the very same tester is now able to test multiple radios in common use, including: UHF, VHF, and high frequency radios, survival vest radios, and four different types of navigation radios installed in Army aircraft. A Business Case Analysis was commissioned and completed in April of 2007 to see what could be realized as a savings and to see if investing into fur-



*A Soldier from the 1108th Aviation Component Repair Activity Depot (AVCRAD), stationed at the Theater Aviation Maintenance Program AVCRAD in Kuwait, operates a GRM-122 test set.*

thering the AVCRAD program was worth the effort. It was found that by incorporating the improved functionality of the GRM-122 at 80 AVIM locations, we could supplant 36 existing test sets, and realize a savings of more than $135 million over the 20-year equipment lifecycle.

The investment cost to do this would be approximately $8 million.

Based on this projection, the CECOM LCMC Logistics and Readiness Center (LRC) seeded the effort with approximately $700,000.

The results of the seeding ensured that the first nine GRM-122 Upgrade Kits destined for AVIM units in Southwest Asia were acquired and fielded. In FY 2008, a $2 million congressional plus up permitted the establishment of a Government Services Agency contract to obtain up to 30 full upgrade kits.

The $4.5 million contract was awarded on June 12, 2008, and part of the first $2 million increment was used to acquire some of the kits. Any future funds will permit acquiring more from the GSA contract and also initiate awarding a 5-year indefinite-delivery, indefinite-quantity contract to buy kits, parts and cables. Ultimately, a minimum of 70-plus upgrade kits will be acquired, along with repair and upgrade of the original GRM-122 sets that would use those kits. All of this will be accomplished as other funds become available.

Some of the benefits of this effort have been immediate. The maintainer gets better, faster test equipment to reduce repair cycle time. The depth of fault isolation is greater and more definitive than before. Hence, the aviation Warfighter will have reduced downtime at a lower cost and higher reliability then ever before. This improved test capability also reduces No Evidence of Failure events, which means only broken equipment is removed for repair. Meanwhile, with the early fielding of equipment that started with the first nine GRM-122 test sets, savings in the field are beginning to accrue.

The success of this project has led Tobyhanna Army Depot to add some of these test sets to its depot level testing inventory, increasing the commonality of avionics testing across field and sustainment maintenance levels.

**BIOGRAPHIES**

Michael A. Benson is Chief, Information Technology, of the LRC Field Services Branch. Bob Mansfield is a contractor who was formerly a Senior Logistician in the LRC's CCS/Avionics Directorate. Jeff Spangher is a contractor who retired as a Deputy Director of the LRC Communications Directorate. Ronald Cialino is Chief of the Avionics Division in the LRC's CCS/Avionics Directorate .

# Chaplain's Posts from Iraq

## July 25, 2008

If you want the cool part of the day (a relative term!) then you have to get up by 5 a.m. That's when most folks over here start their day. If you are lucky enough to have a "wet" containerized housing unit (CHU), then you only have to worry about getting shower and bathroom time from your suitemate. If you have a "dry" CHU, then you have to head outside and over to the common shower trailers, hoping the facilities aren't all occupied.

But at least the walk isn't too hot at 5 a.m., and you don't have to worry about rain this time of year. In fact, on many of the forward operating bases, civilians, contractors, and military gather outside their buildings each day in makeshift pavilions, gazebos, and patios for coffee and some morning motivation.

A tight bond forms quickly between those who share this common environment and mission. Old-timers show new timers the ropes. Then it's into a myriad of workspaces ranging from giant Sprungs (large, framed, fabric shelters) to shipping containers turned into offices. It doesn't matter if your space lacks air conditioning, is small and cramped or full of dust, the mission doesn't ever stop and

*The author of the dispatches published on the dates shown , Chaplain LTC Peter J. Mueller (right) with SFC Virna Scott, chaplain's assistant, at the M1114 transfer site at the Taji National Depot, Iraq.*

neither will you. The jobs are as varied as the people. On one bench someone might be working on equipment used to defeat improvised explosive devices  Just over the next partition someone else might be fixing a piece that helps a Soldier locate a sniper.  Across the base another CECOM-LCMC logistics assistance representative is bringing back up a Firefinder radar or a RAID system.

Maybe you will be catching a Blackhawk helicopter to head to a small FOB and fix a single piece of equipment needed by the Soldiers clearing the roads of IEDs. Each day has a new challenge but the same focus – get our equipment and Soldiers back in the fight.  Most people work a couple of hours before the

dining facility calls them for breakfast.  After scanning your CAC card to enter, you grab a tray and load up on eggs, bacon or ham, grits if you're southern, fruit and drinks, and head over to get either an omelet or a fresh waffle! Getting enough to eat is no longer a challenge for most people in the now robust theater of operations – staying trim is.

Most civilians and contractors here don't have much time for physical fitness, although a new allowance gives them an hour a day for PT. The biggest problem is in finding time for that hour in a day that stretches 12 to 16 hours.

For many, the best they can get on a regular basis is to skip the bus ride to work and walk. But on those days (and there have been many)

when the dust is so thick you don't want to walk outside without a face mask, then riding the bus or catching a ride seems a better option. Some folks try skipping meals, but since meal time is also a time to meet friends and catch up on the news, most make sure they go at least once a day.

There is a strong sense of community in this place. People working together seven days a week for a cause they believe in tends to pull them together. Of course not everyone always gets along, and the environment itself can lead to people getting on each other's nerves. But overall, the camaraderie is excellent.

Many FOBs now have few if any attacks, while some areas are still fairly hot. Everyone takes it in stride and keeps on working.

Heading out around 8 or 9 p.m., it has started to cool down again and a shower will feel really good, if you can find an empty stall. A good book or a movie helps put you to sleep, ready to get up and do it all over again. But it's worth it. You're making a tremendous difference. You can see it in the soldiers' eyes and feel it in their hardy handshakes when they pick up the equipment you just fixed. That's a good feeling and it keeps you going strong!

## October 17, 2008

The world has come to Iraq. Go anywhere here and you will find people from all over our globe working hard to support our troops as they secure this war-torn land.  Men and women come from India, Bangladesh, the Philippines, Uganda, Jordan, Lebanon, Pakistan, Russia, Poland, Great Britain, Italy and even the Pacific Island chain of the Kingdom of Tonga. And those are just the countries whose people I've met!

The immensity of effort over here in Iraq is something that I simply could not appreciate until I saw it with my own eyes.  Every hori-

zon is filled with activity, from helicopters taking off to cranes lifting containers to dust swirling up from convoys.  People are coming and going everywhere and the Soldiers seem outnumbered by all the civilians.

The immensity of the effort by our great DoD civilians, DA civilians and contractors here in Iraq is also something that I could not fully appreciate until I saw it personally.  I knew they were here.

Before I came, I saw the numbers of the Army Team C4ISR people in theater, but to visit their Sprungs (large, framed, fabric shelters) and warehouses and vehicle yards, I now truly understand that

this is a tremendous effort by literally thousands of people, each with their own commitment, dedication and story.

I've talked to them everywhere: at their job sites, in the dining facility, at the headquarters and on their forward operating bases.

Some are here with their spouses! There are some here with their siblings or cousins.  Some come for six months, some come for a year.  Many have been in Southwest Asia for more than three years.

But there is one consistency among them all – they do it for the Soldier, Airmen, Sailor or Marine who is outside the wire carrying out the mission.  Not a single person I've

talked to has had the mission far from their mind each and every day.

Most of them work 12 to 14 hours a day, seven days a week, with maybe a late start on Sunday so they can go to religious services. How can they do that?  The answer is always the same.  "We do it for the Warfighter."

One might assume they have been coached to respond that way. But I am talking about independent-minded, "been around the block" contractors and civilians.  The guy with the big biker's beard, tattoos, and Harley Tee-shirt is not likely to spout a party line.  But the answer is still the same.  "We do it for the Warfighter."

SUSTAIN

# ENGAGING

**While system builders learn of Army life, leaders learn by engaging public**

*MAJ Ryan Welch, Command and General Staff College student, addresses a group of industry professionals about his experiences while deployed as an Apache pilot in support of Operation Iraqi Freedom. The briefing was part of the CGSC speakers program.*

**By Brandon Pollachek**
*IEWS Correspondent*

CAMBRIDGE, Mass. — As a group of more than 100 corporate employees gathered for a lunchtime speaking engagement here, the setting was status quo except for the speaker. More accustomed to hearing from academics from nearby Harvard University and Massachusetts Institute of Technology, government counterparts, or other senior leaders, the audience instead got a twist, they heard from the end user of their product – a Soldier.

MAJ Ryan Welch, an Apache pilot, delivered a presentation centered on a few battles he participated in while deployed in support of Operation Iraqi Freedom. Following his 30-minute presentation, Welch fielded questions from the audience for more than 45 minutes. He discussed everything from the various systems he uses in the cockpit to troop morale and the challenges the pilot faced in the deployed environment.

Welch participated in the newly formed Command and General Staff College (CGSC) Industry Speakers Program, which matches up students attending the intermediate development course at Fort Leavenworth, Kan. with industry. Students are afforded an opportunity to share their military experiences with the men and women that produce the very products they use on the battlefield.

The program's roots are based on the Commandant of the U.S. Army CGSC, LTG William Caldwell's, requirement for CGSC officers to speak publicly as a prerequisite to complete the course, as well as a desire from Army Program Executive Offices (PEO) to have Army officers engage their industry partners. Six PEO's participate in the program, each reaching out to those with whom they do business. So far, more than 35 companies are participating.

All students attending CGSC, primarily Army majors, are required to participate in a speaking engagement during the course of the program. "With less than one percent of the U.S. population serving in the military, I think it is imperative for our Soldiers to share their stories with the American public they serve," said Caldwell. "The 'Sharing our Story with the Nation' program (which the Industry Speakers Program falls within) gives students the opportunity to honor their fallen comrades and tell the incredible story of the American Soldier, while simultaneously educating and informing members of the community. I truly see this as one component of being able to effectively operate in today's information environment."

"I chose to participate in the Industry Speakers Program in order to thank industry research and development personnel for their vital role in providing our Warfighters with top-end technological equipment in the GWOT (Global War on Terror)," said Welch, one of the first students to participate in the program.

"Secondly, I wanted to share some stories about the heroics and tremendous sacrifices that our Soldiers make on the battlefield every day. I feel that it is important for these workers to know what their work ultimately results in where the 'rub

## *Spectra People Power Focus: Rosa Miranda*

# Engineer deploys to acquire Soldiers' view

**Erica Fineman-Bertoli,**
*CERDEC Correspondent*

For the majority of the Fort Monmouth workforce, offices are located in comfortable buildings where amenities and conveniences are readily available. For most employees, when business travel occurs, it involves conferences, meetings and comfortable hotels.

For some, however, a day at the office is a 12-hour shift in a field of war, serving with a forward company in support of essential technology. For these men and women, the U.S. Army Communications-Electronics Research, Development and Engineering Center (CERDEC) mission to support the Warfighter involves the decision to provide this support in person.

"There have been other civilians who have deployed to support these systems, and it was something I wanted to do, so I volunteered," said Rosa Miranda of her six-month deployment to Iraq.

Miranda is one of eight Software Engineering Directorate (SED) civilians who volunteered in 2008 to deploy to Southwest Asia in order to gain a better understanding of how technology providers best serve Soldiers in the field.

"I have been working with these systems since 2006. Our systems are fielded in various places, and one of those places was Iraq. I chose to deploy because I wanted to see the whole thing from the perspective of the Soldier," she said.

While in Iraq, Miranda has been assigned to lead the Distributed Common Ground System-Army (DCGS-A), Forward Support Team, a complex organization with more than 100 personnel located at 15 sites across Iraq and Qatar. As the team's civilian leader and subject matter expert, she is responsible for interacting with all the elements necessary to ensure a smooth system deployment and system sustainment


Courtesy Photo

*Software Engineer Rosa Miranda.*

once deployed.

For SED, their role as the Army's "software force" means a considerable amount of hands on collaboration with Soldiers in the field.

"We have individuals within SED who receive calls directly from the field asking questions. We provide that support through training exercises prior to deployment, new equipment training and delta training on fielded systems," said Michael Skurla, director of SED. "We also have directorate representatives like Rosa out in the field who volunteer to deploy so that they can provide onsite support to the Warfighter."

"The role that Rosa is filling is to work with all of the contractors out there, makeing sure that they get what they need," said her supervisor Larry Lashine, SED branch chief for DCGS-A.

Her work in this capacity led not only to fielding of critical intelligence capabilities but also earned her recognition as, "Hero of the Week,"

for the Multi-National Force- Iraq Intelligence Team of Teams.

"The non-commissioned officer in charge had to step out for a few weeks, and I had to fill his shoes as both the executive officer and the senior enlisted advisor. I was also called upon to serve as the implementation chief," she said of the circumstances surrounding the award.

According to those who submitted her for this honor, it was Miranda's leadership and dedication that made the success of the system implementation possible. For Miranda, however, the award is welcome, but beside the point.

"This experience has let me see our work from a whole new perspective," she said. "When you're back at Monmouth, you don't know or understand what is going on in the forward area. Just being here, I will be able to understand so many more things for having experienced it myself."

As her deployment comes to a close, Miranda has earned a reputation in the field for technical expertise and attention to detail that according to her colleagues in the field was essential to positive mission outcome. Lashine, however, is anxious for her return.

"I am always concerned when our staff deploy since it is a field of war," said Lashine. "However, this was something that Rosa really wanted to do, and we were all proud to support her."

"As an engineer, a citizen and a patriot, the reason why we do what we do is that we make an impact every day in support of the Warfighter in the field. Through technological advancements, we give them that edge to protect them while they execute their mission," said Skurla.

Miranda is pleased with her time in the field.

"I came out here to learn as much as I can," she said of her time in the field, "and I have had a great experience. With that said, if the team ever needs me to deploy once again in the future, I welcome the challenge and opportunity."

---

ber meets the road.'"

In addition to the benefits speakers receive from participating, the CGSC Industry Speakers Program also represents an opportunity for PEO's to solidify their relationships with their industry partners.

"This is a tremendous opportunity for young officers to gain some appreciation of what industry does and as well as for workers at defense contractors to hear directly from Soldiers about the Army and what the capabilities industry provides mean to them. It's a great experience for

all involved," said BG Thomas Cole, Program Executive Officer Intelligence, Electronic Warfare & Sensors.

"The feedback I have received on this program has been nothing short of phenomenal. Every audience from Massachusetts to Arizona has raved about the professionalism and enthusiasm of our student representatives," said Caldwell. "With 16 engagements conducted in less than four months, I see this program as a true win-win for everyone."

Following his briefing Welch said, "The pri-

mary benefit of this engagement was the ability to connect with people who are involved in the development of equipment that will make my future units more combat effective."

Additionally, Welch viewed his speaking engagement as a chance to connect with the audience on two levels. He wanted industry to be able to take away the fact that "what they do is important, and results in lives saved," said Welch. "We are making significant gains on the battlefield that are a direct result of your diligence and determination in resourcing Soldiers."

**SUSTAIN**

# Community connects to deployees

**By Sharon Rushen**
*CERDEC Public Affairs*

Military Spouse Appreciation Day hits close to home with its greatest advocate, Jessi Richter, the Relocation Readiness and Deployment Mobilization Program Manager at Fort Monmouth. Richter, who is married to Ryan, a deployed staff sergeant, draws experience from personal life at work through a program called "Family Connections."

Family Connections is a support group for family members who share the common experience of the absence of their military or civilian loved ones. Richter was hired one week after her husband was deployed in November, 2007.

"When I first started this job, doing the Family Connections, it was a chance to connect with people on a personal level but it was also a chance to help them on a professional level," Richter said. "I am benefiting from this, and it's my job."

Family Connections meetings are on the third Friday of every month, in the conference room of the Army Community Service building on Fort Monmouth's main post; they are open to existing and new members.

The hour-long meetings allow members to socialize with their colleagues, but more important, it is a support system. A common concern among the program members is communicating with deployed spouses. Veteran military spouses aid Richter by providing their insight.

"It was kind of nice to see people who have been there and have gone through the deployments before giving the new people advice," Richter said. "The seasoned spouses were giving the new spouses advice."

Offering help to their colleagues is commonplace for the Family Connections members. Michael Bogner, Netops Operations Research Analyst, attends meetings for a different purpose: he tracks donated items and repackages them to send overseas to deployed Soldiers.

Bogner works with the members of Family Connections to send care packages to their deployed spouses. With the help of other Fort Monmouth employees, Bogner has collected snacks, monetary dona-

*Jessi Richter is the 'Family Connections' program director.*

tions for shipping costs and other goodies to send to troops.

He's pleased to hear that the care package recipients always share the contents with their fellow Soldiers. Bogner fondly remembers the joy he felt as a college student when he received care packages.

"They always enjoy whatever we send them, especially Girl Scout cookies," Bogner said.

Richter welcomes any military spouse, civilian and active duty, nearby or deployed, even if their spouses don't work at Fort Monmouth.

"We have a lot of spouses [whose] husbands go TDY (Travel Duty) all the time," Richter said. "Mili-

tary or civilian loved ones, those civilian employees are getting deployed too."

Richter encourages spouses to get involved as soon as they can and thinks getting a support system like the one Family Connections offers is important.

"If someone is just experiencing deployment, get that support system going before the spouse leaves," Richter said.

As for what she gains from her involvement, Richter said, "Just to know that someone is there, and if I do need help and I am stumbling a little bit, there is someone to support me."

Richter hopes to increase enrollment in the program and has an office full of program and activity guides for military spouses and their children. The day of recognition for military spouses is a gesture that Richter appreciates.

"I think it's nice to be acknowledged. I think from my own experience it's taken for granted that the spouses will be okay," Richter said. "I know I will be okay, but it's nice for someone every now and then to say, 'Are you okay?'"

# Workforce thinking 'inside the box'

**By Debbie Sheehan**
*CECOM Correspondent*

Movers and shakers are always extolling the virtues of "thinking outside the box" and coming up with new and innovative ways to solve problems and to brainstorm. However, Susan Nappi, CECOM Life Cycle Management Command assistant deputy chief of staff for Operations and Plans, said at a recent Base Realignment and Closure (BRAC) Town Hall Meeting that she wants Army Team C4ISR personnel to think "inside the box."

It's a real box she calls "the relocation information, entitlements and decision making or RED" box. The RED boxes are filled with helpful information for those considering moving to Aberdeen Proving Ground, Md., and have been available for distribution since spring.

Inside the RED boxes those considering the move will be able to find basic Maryland, Delaware and Pennsylvania county information concerning school system statistics, taxes, medical care, housing, commute times, maps, moving tips and more.

Also included are booklets on Transfer of Function, on the Defense National Relocation Program, on the Homeowners Assistance program and opportunities associated with relocating.

The decision-making portion of the boxes have a "Relocation, Making the Right Move" booklet, a "Coping with Change" booklet and a coloring book for children called "It's Time to Move".

Nappi invited those considering the move to take part in a free, one-day, "Greenlight Baltimore, " bus trip and social reception in Baltimore, April 12.

Other events have included a bus tour to and around Aberdeen Proving Ground, a trip to New Castle County, Del., and the third Team C4ISR Relocation Fair.

The Maryland Division of Workforce Development has placed Fort Monmouth Transition One-Stop Career Centers at two First Atlantic Federal Credit Union locations.

One is located here on post at the Credit Union on Alexander Avenue. It is open Monday to Friday from 10 a.m. until 2 p.m.

The second is located at the First Atlantic Federal Credit Union at 468 Industrial Way West in Eatontown. That location will be operational from 3 until 6 p.m., Monday through Friday. Evening appointments and some Saturday appointments are available.

Andy Moser, assistant secretary of Labor for the State of Maryland Division of Labor, Licensing and Regulation, also joined the Town Hall Meeting to explain what services are available at the One-Stop Center on post for those moving to Maryland.

He joked that he's a "Jersey boy" who moved to Maryland and survived.

Moser said the site will provide information about employment, education and relocation.

"We plan to have a live person there by February who can help you make decisions," he added.

# I2WD gives cadets glimpse of future

**SUSTAIN**

**Erica Fineman-Bertoli**
*CERDEC Correspondent*

Though known as a bastion of military leadership, few in the public realize that West Point is credited as the nation's first engineering school. It is this historic bond between military and technology that led the scientists and engineers of the U.S. Army Communications-Electronics Research, Development and Engineering Center's (CERDEC), Intelligence & Information Warfare Directorate (I2WD) to host a series of West Point cadets for rotational summer internships.

For the three cadet interns, Michael Niemiec, Blair Miller and Dhruvkumar Desai, the experience was both rewarding and surprising.

"The Army is all about being 'boots on the ground,' but it is the technology that lets us stay that step ahead," said Desai.

As a member of the West Point Board of Directors, I2WD Director Anthony Lisuzzo has a special connection to West Point and its cadets.

"This generation will be unlike any other," said Lisuzzo. "That is why we are so interested in these cadets. They are the next generation, and they will take what they have learned here and use it to help them move forward."

As for what they are learning, West Point teaches that sound military education must go hand-in-hand with a foundation in technology and engineering.

"All cadets must take a required engineering sequence as part of their curriculum at West Point," said MAJ Melanie Carlson of the Systems Engineering department at West Point. "Having that perspective and being able to approach and solve difficult problems is something the Army needs and values, and something that the engineering thought process provides."

Carlson also cites the necessity for military leaders to be fluent in the language of technology.

"There is an understanding that we are a technical Army, and the cadets need to have an understanding of technology and the engineering that underlies that technology," said Carlson.

Steve Wallner, special assistant to the director of I2WD, coordinated the program with West Point on behalf of I2WD. In working towards getting the cadets in place, he kept a clear understanding of the relevance of cutting edge technology to force dominance.

"The goal of a program like this is to build a good teaming relationship between the engineering center and West Point," said Wallner. "We want them to have an opportunity to work on a real project with I2WD. The payback for us is that as these cadets move in their careers to po-



Photo by Gail Woodworth

*I2WD's Allan Chan demonstrates technology for Cadet Blair Miller.*

sitions of leadership, they will have a clear understanding of the support provided to the Warfighter by the research centers."

LTC Bruce Ryba, current operations support coordinator, is himself a West Point graduate, and has become involved with the cadets as a bridge between civilian and military points of view.

"Every one of the cadets that came through this program is bright and capable," said Ryba. "This has been a great opportunity for them to see that what they study in their engineering programs at West Point isn't only academic."

Allan Chan of I2WD's Futures branch, and mentor to Miller, was quick to point out the impact this experience would have on the cadets' futures.

"As military leaders, they will have to make decisions, and those decisions may ultimately be based in part on what they learned here at I2WD. They will be better prepared to lead because they now understand the technology and how it works," Chan said.

Yet the benefits of the program were far from one-sided.

"This program is a very positive thing," said mentor and I2WD team lead Jon Smolenski. "A program like this gives the cadets more insight into the type of engineering work that is done to support them in theater. By giving them this exposure, we not only supplement their engineer-



Photo by Gail Woodworth

*West Point Cadet Michael Niemiec works in the I2WD yard.*

ing curriculum at West Point, but we leave a lasting impression."

"I think this program gives both sides the learning and understanding of each world," said I2WD electrical engineer and cadet mentor Nicole Robinson. "By having programs like this, we become more integrated and we can begin to understand each other."

Lisuzzo also saw the positives of the situation's impact on the I2WD staff.

"Particularly with our younger engineers, once they understand why what they do is so important, when they understand who they are supporting, they take pride in going that extra step to make sure everything works the way it is supposed to. There is a level of patriotism that propels everyone forward," said Lisuzzo.

> *"In this century, I have bounced sensitive whispers off the moon, and guided manmade moons in orbit around our earth. For the first time ever, I have cupped my ears and listened to satellites. My far reaching voice can now reach across the vast expanse of space. I can guide rockets and missiles ... I can do that and more. I am the Signal Corps ..."*
>
> **Samuel A. Barnes**
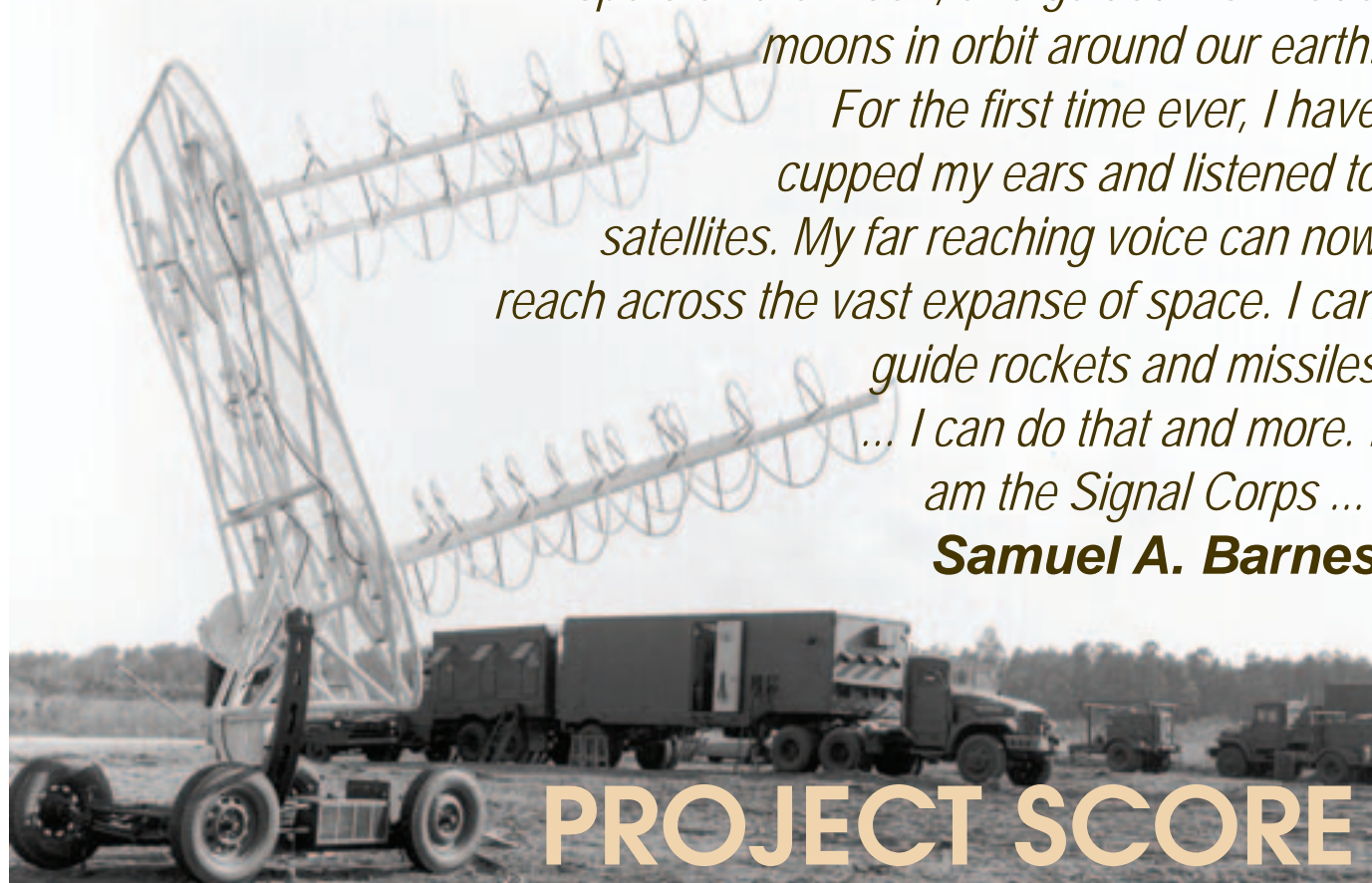
# PROJECT SCORE

*This intricate antenna was used to transmit and receive messages at the Fort Stewart, Ga. tracking station.*

# Space first recalled after 50 years

**By Wendy Rejan**
*Command Historian*

Fort Monmouth and the Infoage Science/History Learning Center commemorated the 50th Anniversary of the broadcast of a human voice across space on Dec. 18 in a formal ceremony at Camp Evans in Wall Township, N.J.

Known as Project SCORE, or Signal Communication by Orbiting Relay Equipment, the groundbreaking Fort Monmouth communications project preceded all current communications satellites.

The broadcasted voice message belonged to President Dwight D. Eisenhower.

Personnel who worked on the SCORE project as well as their family members attended the ceremony. Infoage Director Fred Carl welcomed attendees, while it was my honor to follow with a history of the project.

Project SCORE commenced amidst the Cold War space race with the Soviet Union. Just a year before, the United States suffered defeat when the Soviets launched the first human-made object to orbit the Earth, Sputnik.

Doctor Hans Ziegler, Assistant Laboratory Director here, wrote that he would never forget the impact of Sputnik on the personnel in the labs who had been working day and night for years to secure the "first in space" victory. Everyone felt extremely upset and dejected over the failure.

Now, a year later, the Army and the country had a unique opportunity to redeem itself with the world's first communications satellite. The success of this project meant that the United States overtook the Soviet Union in the number of active satellites successfully launched.

The Advanced Research Projects Agency (ARPA) directed SCORE. Many other industry partners, such as the Radio Corporation of America, contributed to the effort. The Air Force Atlas Inter-Continental Ballistic Missile launched the SCORE package from Cape Canaveral, Fla.

ARPA assigned the communications portion of the project to the United States Army Signal Research and Development Laboratory at Fort Monmouth in July 1958. This lab is one of the predecessor organizations to CECOM.

The challenges involved in the ambitious SCORE project included creating a communications and electronics (CE) payload which could survive both launch and the extreme conditions of outer space. Ground tracking stations also had to be installed and operating crews trained.

The lab here was responsible for the design, fabrication and installation of the satellite CE package for Project SCORE as well as transmitting, interrogating, recording and tracking messages.

The CE package included various transmitters and receivers, a miniature tape recorder, batteries and a control circuit. The total payload weighed about 150 pounds.

Army officials deemed satellite communication essential to what one Fort Monmouth memo described as the "growing traffic jam in the radio

wave spectrum in ground to ground military communications."

The satellite successfully launched on Dec. 18, 1958 and proved that active satellites could receive voice and teletypewriter signals from the ground and relay or store them.

A total of 88 personnel across the nation worked on SCORE. This group, later referred to as "Club 88," included some key Fort Monmouth scientists and engineers: George F. Senn, Project Manager; Samuel P. Brown, Deputy Project Manager; Samuel E. Findler and George Strimple at the Potterdam tracking station in California; Dominic L. LaBanca at the tracking station in San Antonio, Texas; Rudolph C. Riehs, a technical consultant on the project;  Marshall I. Davis, Project Engineer; Herbert C. Hawkins, engineer in charge of ground stations; John C. Cittadino, Mechanical Engineer at Cape Canaveral; and Lloyd Manamon, head of the Deal Test Area where control of the tracking operation was coordinated.

Such secrecy shrouded SCORE that personnel were not permitted to tell their families or co-workers what they were working on until the following year. Many employees working on the electronic components had no idea what they were going to be used for.

Cittadino laughed as he recalled that the wives, who were staying with their husbands in a nearby hotel while they were in Florida for the launch, "were told that they were working at the nearby Air Force Base and not at the Cape." Cittadino said they even went so far as "to drive in the opposite direction of the Cape, toward the Air Force Base, go down a couple of miles, make a U-Turn and go back in the other direction without anyone seeing us since it was a divided highway…and we did that every day in order to keep the wives from knowing that we were working at the Cape."

According to a 1959 Fort Monmouth news release, the public news of the project allowed the  "Fort Monmouth men working on Project SCORE… to tell their wives, families and associates what they had been working on for the past six months, erasing at one stroke wifely suspicion about overtime work and unkind remarks about boondoggling by unknowing associates." Davis described the security restrictions of the project as "the worst we had ever encountered."

According to BG. H. Mc D. Brown, head of the Signal Research and Development lab, the project was kept so secret that "Major General Moorman, the commanding general of the Army Electronic Proving Ground at Fort Huachuca, threatened to have our people evicted from his post by the MPs unless he got some explanation of our clandestine activities."

Davis remarked that if the system hadn't worked "nobody was to ever hear about it….Boy



U.S. Army Historical Archive

*The Air Force Atlas Inter-Continental Ballistic Missile was the launch vehicle for the SCORE communications payload.*

were we glad when the Atlas sent that message back." Cittadino said they weren't convinced the launch would be successful. "This was the first time anybody had ever tried something like this. We were confident the radio part of the project would work. The thing that was very much in doubt was whether they were going to be able to get the missile into orbit."

According to Cittadino, the team at Cape Canaveral was able to pick up the satellite an hour and 25 minutes after the launch. He said "all hell broke loose" as everyone celebrated the success.

President Eisenhower, who was conducting a state dinner that evening, interrupted the dinner to proudly announce that the U.S. now had the 9,000 pound Atlas satellite in orbit.

BG Brown wrote that the original plan called for transmitting a pre-recorded tape message of a historical document on the satellite tape re-

corder. At the last minute, after the Atlas had already been sealed, ARPA Director Roy Johnson managed to convince President Eisenhower that the launch was a good opportunity to broadcast a peace message to the world. Brown said this created a tricky situation as the "substitution of the prerecorded messages had to be done by radio interrogation and transmission with the risk that the ever alert news media might intercept it and prematurely publish it. But in the wee hours of Thursday, 18 Dec. 1958, the Signal Corps team succeeded in this tricky task."

The content of President Eisenhower's message follows:

"This is the President of the United States speaking. Through the marvels of scientific advance, my voice is coming to you from a satellite circling in outer space. My message is a simple one. Through this unique means, I convey to you and all mankind America's wish for peace on earth

U.S. Army Historical Archive

*SCORE, the world's first communications satellite, broadcast President Eisenhower's Christmas greeting to the world on December 18, 1958. This technology, developed at Fort Monmouth, proved that voice and code signals could be relayed and stored over vast distances.*

and good will to men everywhere."

Samuel Findler at Corona, Calif., placed the first messages on the satellite during orbit 28. The tracking station at Fort Sam Houston, Texas, received the message. The recording stated, "This is a recording of the first pass of the Atlas missile which was launched on Dec. 18, 1958. This recording was made at the Potterdam site in Corona, Calif." Personnel delivered the



prologue identifying the station and then followed that with a retransmission of President Eisenhower's message. This message was retransmitted to all the other ground stations across the U.S.

All of those ground stations were linked by telephone and HF radio to the System Control Center at the Fort Monmouth Deal Test Area.

The last successful communication with the satellite occurred on Dec. 30 during orbit 169. BG Eric Svensson of Fort Stewart, Ga., recorded that mes-                    sage. Part of the message follows: "This is the Commanding General of Fort Stewart Ga., BG Eric

U.S. Army Historical Archive

*A 75-foot length of magnetic tape was used in the SCORE tape recorder cartridge. Demonstrating the care that goes into each cartridge, John Kwik, Engineering Facilities Division lab, and Robert A. Von Behren look over a completed cartridge.*

Svensson, on behalf of the officers and men of the United States Army Anti-Aircraft Artillery and Tank Training Center, I would like to congratulate all the personnel at Fort Monmouth who played a part in the Atlas communication satellite."

SCORE burned up in space 34 days after it launched.

At the height of the Cold war era, SCORE was a major boon for the U.S. This satellite was also the first to be visible to the naked eye under good atmospheric conditions. Doctor Hans Ziegler, Assistant Director at the labs, predicted at the time that SCORE would usher in world-wide television.

The Army donated an exact duplicate of the SCORE satellite electronics equipment to the Smithsonian Institute in a formal ceremony on July 7, 1964. The Army created this duplicate as a backup should the original fail before missile launch. The ceremony marked the official opening of the new Hall of Electricity in the Museum of History and Technology. MG David P. Gibbs, Chief of Army Communications-Electronics, delivered opening remarks at the ceremony. He told the audience that the Army took great pride in being among the pioneers of space communications.

SCORE paved the way for all future communications satellites and was followed just two years later by the Courier satellite, which relayed the first photograph ever sent through space.

In reflecting on this historic event, BG Brown remarked, "The Army Signal Corps had really done it again! Almost 100 years after it had given our country its first primitive network of telegraph communications, it had pioneered the nation's and the world's first communications satellite, demonstrating almost unlimited potential."

Thirty-seven members of the Fort Monmouth team who contributed to the project's success each received one of the largest incentive awards in Army history, $7,200.

At the anniversary ceremony at Camp Evans, Project SCORE members and their families received recognition certificates in honor of their contributions. The original transmissions were replayed for the audience.

SCORE was not only a pivotal moment in Fort Monmouth's history, but in our nation's history as well.

It changed the entire landscape of communications technology for the Army, for the United States, and for the world. The legacy of SCORE is enormous, said Cittadino, "when you consider how commonplace and important satellite communications have become to the world…It was a major step forward."

To hear the original recordings of the SCORE transmissions, please visit www.monmouth.army.mil/historian.

# AMC CG's family, fort past, connected

**By Melissa Ziobro**
*Staff Historian*

GEN Ann E. Dunwoody became the first woman in U.S. Armed Forces history to be promoted to the rank of four-star general during a ceremony at the Pentagon on Nov. 14. Later that day, she became the first female commander of AMC during a ceremony at Fort Belvoir, Va.

Dunwoody, one of only 11 four-star generals in the U.S. Army, has accomplished several other historic firsts— including being the first female assigned as deputy commanding general of AMC, the deputy chief of staff of Army logistics, and commander of the U.S. Army Combined Arms Support Command.

During her promotion ceremony at the Pentagon, Dunwoody said, "I know this Army profession I'm so proud to be a part of is a reflection of the very values I grew up with in the Dunwoody family."

Defense Secretary Robert Gates noted the Dunwoody family's service to America in remarks opening Dunwoody's Pentagon ceremony.

That service, he said, spans five generations. It all began with her great-grandfather, BG Henry Harrison Chase (H.H.C.) Dunwoody (1842 to 1933). BG H.H.C. Dunwoody graduated from West Point in 1866.

Following early service as an artillery officer at various stations in the United States, he was, for a number of years, on duty in the Office of the Chief Signal Officer, Washington, D.C.

There he engaged principally in weather forecasting and the study of meteorology.

BG Dunwoody followed the Weather Bureau when it transferred from the Office of the Chief Signal Officer to the Department of Agriculture in 1891.

There, as Chief of the Forecast Division, he inaugurated a system of distributing storm warnings that, according to personnel records, resulted in "incalculable protection of human lives and property."

The Secretary of Agriculture and the President commended BG Dunwoody for his work during that period.

With the outbreak of the Spanish-American War, he organized the Volunteer Signal Corps and served as Chief Signal Officer in Cuba from 1898 to 1901.

During this period, the United States Army Signal Corps reconstructed, extended and modernized the entire Cuban telegraph system.

Army records state that BG Dunwoody's "skill, energy, and unremitting zeal insured from the outset the successful reorganization and operation of the signal activities in Cuba."

Returning to the United States, he subse-



Photo by Wayne Scanlon

*Generals Griffin, Casey and Dunwoody salute the colors during Dunwoody and Griffin's change of command ceremony, Nov. 14, at AMC's parade field.*

quently served as Acting Chief Signal Officer and then as Signal Officer, Department of the East, Governors Island, N.Y.

He ultimately commanded the post at Fort Myer, Va., until his retirement in 1904 after more than 40 years service.

BG Dunwoody died at his home in New York on Jan. 2, 1933. The Signal Corps noted Dunwoody's passing with the following sentiment:

"The sincere sympathy of the Signal Corps is extended to the members of his family and it shares with them the pride of one who rendered distinguished service to his country."

Fort Monmouth memorialized BG Dunwoody's service in 1950 with the designation of Dunwoody Park here.

The park, designated before GEN Ann Dunwoody was born, is located at the intersection of Brewer and Malterer Avenues with Sherrill Avenue.

Dunwoody Park features the Spanish-American War Memorial, donated by the U.S. Veteran Signal Corps Association, Spanish War Division, at their 50th and farewell reunion.

The association unanimously recommended that their memorial be placed in an area known as "Dunwoody Park," stating that BG Dunwoody "was a gallant and efficient officer and much beloved and respected by all who knew him."

Members of the Dunwoody family attended the Spanish American War Memorial dedication ceremony.



This included GEN Ann Dunwoody's grandfather, COL Halsey Dunwoody, who delivered a brief speech.

COL Halsey Dunwoody later wrote to Fort Monmouth Commander MG Francis Lanahan, "your program for the 50th and farewell reunion of the U.S. Veteran Signal Corps Association Spanish War Veterans was the finest ceremony of its kind I ever saw....It certainly was a memorable occasion and one which will be inspirationally remembered always. You made everyone happy, even my five-year-old blonde."

The Dunwoody family tradition continues to this day with GEN Ann Dunwoody's historic achievements of Nov. 14 and the service of Dunwoody's Air Force fighter pilot niece.

GEN Dunwoody realizes her great-grandfather's memorial is here and may visit the park during her yet to be scheduled visit here.

**PREPARE**

## ARMY IMPERATIVE: PREPARE

**Prepare** our fighting forces with the training and equipment they will need to combat an evolving enemy who often resorts to unconventional approaches to warfare.

"I will tell you that the forces that we're sending to Iraq and Afghanistan have improved in leaps and bounds in terms of the equipment that they're bringing with them."
-- Army Chief of Staff, GEN George W. Casey"

Photo from www.army.mil

# Depot extends reach to war zone

**By Jaqueline Boucher**
*Tobyhanna Correspondent*

Tobyhanna's ability to make on-site repairs to communications-electronics equipment extends the scope of its maintenance and logistics mission from the mountains of Pennsylvania to the deserts of Southwest Asia.

Hundreds of depot employees deploy each year to more than 20 Forward Repair Activity (FRA) facilities to support expeditionary logistics missions in Iraq, Kuwait and Afghanistan. Military members from all branches of service depend on Tobyhanna's skilled technicians to fix systems and components damaged in the hostile environment.

"We have the capability to move a very flexible, adaptable, and responsive workforce where it needs to be when it needs to be there," depot commander COL Ron Alberto said, pointing out that a large percentage of the depot's workforce works outside the installation.

Tobyhanna has a worldwide net of more than 65 FRAs.

Tobyhanna volunteers support various repair missions: Firefinder radars, Warlock electronic countermeasures, communications security (COMSEC) systems, and command, control and computers (C3). The depot also provides embedded support to the Army's intelligence system, Guardrail. These war zone initiatives are directed by officials in three directorates with deployment lengths averaging six months.

It seems Tobyhanna has found a way to build a FRA around any mission, according to John Parada, C3/Avionics Directorate's FRA Division support program manager. "We have the skills here to run the gamut allowing us to send teams anywhere to do anything," he said.

The repair activity's main objective is to provide a quick turnaround on repairs while eliminating costly shipping charges, according to James Kondratick, COMSEC FRA project officer.

"We have the capability to move a very flexible, adaptable, and responsive workforce where it needs to be when it needs to be there,"
-- Tobyhanna Army Depot Commander, COL Ronald Alberto

To date, sites have received and processed 18,546 in-field repairs or direct exchanges.

"We have outstanding individuals representing the depot and supporting the men and women engaging the terrorists threatening our way of life," said Kondratick. "Whatever it takes, we do it."

He explained that technicians repair, test and modify secure communications equipment in customized shop vans. They also provide direct exchange services for equipment that cannot be repaired in a reasonable amount of time. The vans that support all FRAs are shipped from Tobyhanna fully loaded with tools, test equipment and parts.

"We often see Soldiers covered in sand with an M-16 slung over one shoulder," said Chuck Bartleson, electronics mechanic, adding that his sense of accomplishment from working on one item for a waiting Warfighter is equal to working on 100 components at the depot. Bartleson speaks from experience, having deployed twice for a total of 14 months.

A month-long training course prepares COMSEC volunteers for deployment. The course covers mission, security, accountability, and shipping information. Individuals

must also complete a certification course which enables them to repair COMSEC equipment.

Randy Nielson, a team leader in Iraq, is participating in his third deployment supporting the COMSEC mission. "You'll never do anything more personally rewarding, but think long and hard, and consider the sacrifices involved," he said, explaining that even though he has missed birthdays and anniversaries, his wife continues to back him 100 percent.

Tobyhanna's Firefinder Systems Division supports repair activities in Iraq and Afghanistan. Technicians support the AN/TPQ-36 and AN/TPQ-37 systems, component level work, and the AN/TPQ-48 Light Weight Counter Mortar Radar (LCMR).

"Our FRA teams demonstrate a high-level of technical competence providing system readiness to our Warfighters 24 hours a day, seven days a week," said Daniel Shea, Firefinder Systems Division chief, adding that operations are very flexible and extremely versatile.

"Expect to work long hours," said John Morelli, digital computer mechanic. "But be prepared to gain a lot of personal satisfaction in completing a job well done." Morelli repairs Standard Army Management Information Systems equipment such as computers and printers.

Tobyhanna employees tackle environmental hazards such as sand, heat and moisture on a daily basis while repairing and testing complex electronic systems and components.

Despite the long hours and austere conditions, everyone agrees there's no job more rewarding than helping America's service members.

"This job is very gratifying," said Scott Beck, supply technician. "The Soldiers need us and we provide a valuable service that makes their difficult job a little easier."

Beck orchestrates FRA activities for COMSEC operations around the globe. From his desk at the depot, he is able to replenish supplies, fill positions and file reports based on information gathered from the field.

"I know our customers appreciate what we do," Nielson said.

"They tell us all the time." As team leader, he oversees the day-to-day operation of the shop such as recording transactions, maintaining records, ordering supplies, and managing all shipping and receiving.

Nielson noted that it would take weeks or months for Soldiers to get their equipment repaired or replaced without Tobyhanna FRAs. "With us here, turnaround time is 24 hours or less."

The depot's largest FRA operation directs requirements for several C3 programs such as Command Post System & Integration (CPS&I), Air Defense and Airspace Management (ADAM), Counter Rocket Artillery Mortar (CRAM), Common Ground Station (CGS), and Handheld Interagency Identity Detection Equipment (HIIDE).

"This program just keeps growing," Parada said. "It's a highly diverse mission and computer repair is only about one-third of the workload." Support for the Warfighters and quicker turn-around is precisely why the depot continues to expand the FRA program," he

added.

An asset of the FRAs specializing in computer repair is that the technicians are certified to work on many of the computer systems that the military uses. In most circumstances, equipment is repaired and returned in less than 24 hours.

"FRAs provide immediate support to the Warfighter's mission critical equipment and training efforts," said James Ashton, a process improvement specialist embedded with an Army division in Iraq. Ashton travels throughout the country supporting Soldiers in the area of operation where his responsibilities include training troops on the effectiveness of biometrics and HIIDE system user operations.

"I would highly recommend deployment to anyone seeking both personal and job-related satisfaction," he said. "Our mission is greatly appreciated by all levels and branches of the military."

"FRAs are manned by the boldest, brightest and best Tobyhanna has to offer," Kondratick concluded.

**PREPARE**



Photo courtesy of Steve Grzezdzinski

*A Soldier from the Bradley Vehicle Unit (left) assists Tobyhanna Army Depot's Steve Grzezdzinski with reassembling the antenna for a Warlock System in Camp Victory, Iraq.*

# Latest survivability gear protecting troops while enhancing missions

*Two AH64 D Apache helicopters dispense flares while flying in Balad, Iraq.*

U.S. Army Photo

**By Brandon Pollachek**
*IEWS Correspondent*

Army aviation is predicated on close air support, short-range transportation, surveillance and search and rescue. The term "defense" plays little part in aviation doctrine with the exception of defending ground forces. However, it's the defensive systems located within fixed and rotary winged aircraft that allow its crews to accomplish their primary mission while operating in a combat zone.

In boxing, even the most explosive puncher has to be leery of a cunning fighter who can attack with just the right amount of finesse to render them unconscious. This is the same theory behind the threats that Army aviators are faced with in the ongoing Global War on Terror. With Man Portable Air Defense Systems (MANPADS) serving as a prime threat to U.S. aircraft, it is vital that the aviation community is provided with technology that will keep them one-step ahead of a cunning enemy.

Since the inception of Operations Enduring and Iraqi Freedom, Aircraft Survivability Equipment (ASE) systems have moved into the forefront for senior leaders in terms of added emphasis for upgraded systems and new technologies. "The focus on ASE was increased based on enemy tactics, techniques and procedures," said COL Kennedy Jenkins, program director ASE, Redstone Arsenal, Ala.

Following the loss of a CH-47 Chinook helicopter to an enemy missile in November 2003, then Acting Secretary of the Army, R.L. Brownlee called for a plan, "… to equip all our helicopters in Iraq and Afghanistan with the most effective systems we have in development or procurement." In response to this challenge, Common Missile Warning System/ Improved Countermeasure Dispenser (CMWS/ ICMD) production was immediately acceler-

ated.

"The enemy's use of certain types of threats and capabilities necessitated the CMWS be added to the ASE suite that was then on aircraft," said Jenkins. "The Common Missile Warning System defeats MANPADS, as it warns the crew that a missile has been launched at their aircraft. Because of its effectiveness, CMWS has given pilots an increased sense of security knowing they aren't going to get shot out of the sky by a MANPADS missile."

This added system not only allows for additional security but also offers the pilot the benefit of being autonomous. Aircrews do not have to divert attention from their primary mission in order to counter a MANPADS threat.

Improving on the CMWS system is a key reason a fifth sensor was recently added. The additional sensor gives Army pilots more flexibility in their mission profiles. Today, more than 500 aircraft are deployed in South West



Photo by J.D. Williams

*A U.S. Army Soldier performs engine run-up May 5 in preparation for a UH-60 air transport mission as the aircraft's survivability equipment (APR-39 and CMWS) is operational and visible in the instrument panel.*

Asia with fully operational CMWS/ICMD systems that have flown more than 551,000 hours in the combat theater. Since CMWS' initial deployment, the system has consistently freed pilots up from distractions caused by threats they encounter flying through potentially hostile territories.

"We have many reports of pilots having been saved by their CMWS after a missile is fired at them. CMWS detects the missile, deploys flares, and pulls the missile away from the aircraft," said Jenkins.

The benefits of the system for aircrew that have used it in combat are evident. "CMWS does reduce the immediate reaction workload of responding to a missile threat. This also enables the crew to react faster to destroying the threat on the ground," said CWO (5) Pat Shores, Aviation Branch Tactical Operations (TACOPS) Officer, Directorate of Training and Doctrine (DOTD), U.S. Army Aviation Center of Excellence (USAACE).

"I think the bad guys are finding out the hard way that shooting a missile at Army aircraft is a lose-lose situation for them. They have an extremely low probability of a hit, and due to the CMWS and similar systems, they also have a high probability of being detected and destroyed after the shot," said the UH-60 pilot who flew with 4th Infantry Division during Operation Iraqi Freedom.

Echoing the thoughts of Shores, CWO (4) Jim Massey, Tactics Development, TACOPS Branch, Tactics Division DOTD, USAACE, an AH-64 pilot, that flew with 1st Calvary Division, during OIF said, "CMWS provides risk mitigation for the threat systems it was designed to defeat allowing aircrews to focus more intently on the mission at hand rather than solely on threat avoidance."

On the top of the current agenda for the PD ASE, part of the Program Executive Office for Intelligence, Electronic Warfare and Sensors (PEO IEW&S), is the Army Acquisition

## *Spectra People Power Focus: CWO (4) Eric Adair*

# Field radar expertise benefits PM, Soldiers

**By Brandon Pollachek**
*IEWS Correspondent*

Contributions a Soldier can make for his fellow comrades-in-arms can come in various forms, and many of those tend to be obvious when you are a field artillery targeting technician. However, during an Operation Iraqi Freedom deployment in November 2003 the future for one such warrant officer would change drastically.

While assigned to a tactical unit, retired Chief Warrant Officer (4) Eric Adair was pulled out of theater as the Army had an even more pressing need for which his expertise was ideal. During the early stages of the Global War on Terror (GWOT), the increased importance of counterfire radars in theater was becoming evident; there was an immediate need for an operational expert on counterfire radars to serve in the Project Manager Radars office. Adair found himself thrust into a new environment as the assistant product manager (APM) for PM Radars.

"I was able to bridge between both communities, and after I got my feet wet in the acquisition world taking some basic courses, I was able to forge those connections," said Adair about his assignment. "I've been on the other side and it is having the person in the middle to translate in some aspects and also to shake things up on the acquisition side — that is the importance of having a technical expert in the mix."

Adair was instrumental in ensuring

numerous capabilities made it to the front lines. "Pretty much everything that involves radars I have had my hands on during the past five years," said Adair.

One example of his ability to uniquely meet a demand of the Soldiers in an extremely short time frame was demonstrated by his ability to answer a call from Soldiers in the field for a capability, which could provide 360-degree counterfire radar coverage with increased range. Through his diligence, he was able to field two systems that met the capability need within 70 days to include ensuring they met all fielding, maintenance, training, information assurance, and material release requirements. In another example he pulled together a team of experts and spent four months in Korea meeting the need for critical repair on all of the deployed U.S. Army counterfire radars.

Although Adair was pulled out of theater to become the APM for radars, his duties in that role led him to deploy several times since then. Whether it was supporting the fielding of a quick reaction capability or ensuring that a critical software capability met the needs of Soldiers, Adair said, "I was going out providing field support and collecting lessons learned so that we can improve our products."

According to his Legion of Merit citation, Adair's deployments helped Multi National Corps-Iraq (MNC-I) achieve a greater than 95 percent operational readiness with its counterfire radar fleet.

Following his retirement from active duty



U.S. Army Photo

*CWO (4) Eric Adair helped Multi National Corps-Iraq achieve greater than 95 percent operational readiness with its counterfire radar fleet.*

in November, Adair has decided to remain in the program management world. He is currently responsible for total package fielding of Army ground users for GPS units. "As a fielding manager I will be able to stay in tune with the Soldier in the field and that is what appealed to me the most," added Adair regarding his decision to accept a government position within the Program Executive Office for Intelligence, Electronic Warfare & Sensors.

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Category 1 program, Advanced Threat Infrared Countermeasures (ATIRCM).

The ATIRCM will function with the CMWS to provide aviation assets the ability to focus on their mission while the system protects the aircraft. Mission effectiveness will be enhanced due to the combination of alert and defeat functions of the system which necessitate little to no deviation or needed action by pilots.

ATIRCM consists of a laser that will direct energy on a missile and force it to break away from an aircraft. "They are an integrated system and it has always been the intent to field those two together. The CMWS is the eyes of the system and the ATIRCM is the sword, or active countermeasure of the system," said Jenkins.

The product director for Aircraft Survivability Equipment (PD ASE) is also offering added security to pilots through the rejuvenation of

legacy systems. The APR-39 radar warning receiver has been on board aircraft since the early 1990s. "For what it was capable of during the time it was fielded it was the most modern radio frequency warner in the inventory," said Jenkins. "This upgrade will take into account variables like the types of threat present and where you are flying, so that you will be able to make changes to the system accordingly."

Part of the PD ASE future plans include addressing size, weight, and power issues, which naturally arise any time a new piece of equipment is integrated on an Army aircraft.

PD ASE is moving toward an integrated ASE suite that will be able to defeat all threats regardless of airframe or mission. The integrated ASE system will "fuse the functions of all onboard sensors and provide the input to a 'brain' or ASE controller – based on the type

of threat, the appropriate ASE system is then activated," stated Jenkins. Current ASE systems are federated and have their own dedicated display and warning. The intended purpose of the integrated ASE is that there will be just one system for the users to operate.

The pilot flying an aircraft will hear the same voice or only has to look at one display to get all ASE information. "Protecting the people that protect the nation," is the purpose that ASE serves according to Jenkins. As the future integrated ASE becomes reality for Army aviation it will continue to focus on Warfighter survivability while allowing them to concentrate on their primary mission. Smaller, lighter, interdependent systems will increase load levels and allow the focus to remain on the Soldiers. "It is Soldiers that win battles, not ASE."

**PREPARE**

# Logistics training branch keeping Soldiers on pace with technology

**By Thomas Kester**
*Professional Briefer*

While much attention has been paid to the Army having nearly completed a transformation from an inventory of tactical network communications based on switch technology to one based in Internet Protocol, one accomplishment has not been noted nearly as frequently. How do all the Soldiers trained in Switch technology — and the ones going to the Signal School — get so smart in IP so fast?

Part of the answer lies in the CECOM Logistics and Readiness Center's new training branch, the Information Technology Field Services Branch (IT-FSB), at Fort Gordon, Ga., the home of the U.S. Army Signal School.

The IT-FSB is comprised of a Mobile Training Team (MTT), with courses that support the IP-based transformation, including Basic IT Networking, Advanced Cisco Routing, Call Manager, Promina and REDCOM Laboratories – two major commercial off the shelf components of Joint Network Node, JNN Network Management and Information Assurance.

"What sets us apart from other service providers is that our MTT brings everything necessary to conduct training. We ship equipment, network simulators, books, and associated reference material. We set up equipment to simulate a tactical network at the unit's location and bring in instructors to meet the unit's training needs." said IT-FSB Chief, Mike Benson.

Information Technology Field Services Branch Field Services Teams (FSTs) are stationed at most Army bases worldwide.

The FST provides the same training as MTT, and also provides training in the primary components of the Warfighter Information Network Increment 1: the Joint Network Node (JNN), Satellite Transportable Terminal (STT), and Battalion Command Post Node. The FST also provides support at the unit home station, and Joint Readiness Training Center, Fort Polk, La. and the National Training Center, Fort Irwin, Calif.

A Special Projects Team (SPT) provides training support for the Brigade Subscriber Node, Network Operations Center-Vehicle, Integrated Systems Control System-of-Systems Lab at Fort Gordon, unit data universities, Cisco Certification, and the Military Transition Team (MITT) based in Fort Riley, Kan.

The IT-FSB employs 92 personnel, 50 of whom are government, emergency essential, deployable employees. IT-FSB is a fee-for-service organization with a multitude of customers including the White House Communications Agency, several project managers, the CECOM LCMC Software Engineering Center, the Fort Gordon Noncommissioned Officer Academy, and the CECOM LCMC Logistics Assistance Representative program.

One customer of particular interest to the Warfighter is PM WIN-T Increment 1. IT-FSB provides New Equipment Training (NET), sustain-

ment training, and reset support services for the WIN-T program. What this means to a JNN or WIN-T equipped unit is that most training and field support services come at little or no cost to the units.

The IT-FSB has the equipment ($5 million in hardware) and personnel to run 20 simultaneous classes at 20 different locations and to support up to 15 different field support missions.

In Fiscal Year 2008, the IT-FSB delivered 356 weeks of formal classroom instruction and 278 weeks of field support to Warfighters. Fiscal Year 2009 projections are expected to exceed 500 weeks of training and 400 weeks of field support.

"Additionally, all of our courses come with college accreditation.

Even our field support approach is different; our employees are rated on how effectively and efficiently we can transfer knowledge to the Soldier, especially in theater.

Mike Benson sums it up this way. "Our field support goal is simple; we want the unit, in particular the Soldier, to say, 'We got it, you can go home.'" The focus for the IT-FSB for the next two years is to expand JNN, STT and CPN field support services to include the National Guard and Reserves.

This capability expansion will increase workload on Fort Gordon and develop specific training programs to assist the CECOM LCMC Logistics assistance representative program in supporting future communications systems.


U.S. Army Photo

*Jamie Vinson, mobile training team instructor, works on training equipment at Moran Hall, Fort Gordon, Ga. in December.*

> "Our field support goal is simple; we want the unit, in particular the Soldier, to say, 'We got it, you can go home.'"
> -- Information Technology Field Services Branch Chief, Mike Benson

# Demand high for aerial surveillance

**By Glen Puhak**
*Logistics Correspondent*

FORT MONMOUTH, N.J. - The Rapid Aerostat Initial Deployment (RAID) system has been in high demand ever since the first systems were fielded in 2004 by the RAID Product Office in Huntsville, Ala.

RAID is a force protection system used by the U.S. Army and Marines in support of Operations in Iraq and Afghanistan. It provides base security cells with unique 360-degree, high-resolution, day and night surveillance for enhanced reconnaissance, surveillance, and target acquisition, enabling timely and appropriate response options, according to literature provided by the Program Executive Office for Intelligence Electronic Warfare and Sensors.

Each RAID system can operate independently and consists of three main components: elevated platform, multi-spectral sensor suite and ground control station. The elevated platform may be a tower, aerostat or Eagle Eye depending on the specific operational requirements.

The RAID system's multi-spectral sensor suite includes an electro-optic color daytime camera, an infrared camera, spotter scope and laser range finder.

The growing demand and success of the systems brought with it maintenance, supply and transportation logistical challenges as the systems multiplied and spread across the globe.

In response, the RAID product office requested assistance from the CECOM Life Cycle Management Command (LCMC), here in 2007. From this, the RAID Team was created.

Comprised of Army civilian personnel from Fort Monmouth and Huntsville and field service representatives (FSRs) and contractor personnel in both Iraq and Afghanistan, the RAID Team is truly a collaborative effort that provides global logistics and readiness support to Warfighters.

"RAID is one of the highest CECOM priority items at CECOM," said Lee Straube, chief of the RAID branch, Intelligence, Electronic Warfare and Sensors Directorate (IEWSD) in the CECOM LCMC Logistics and Readiness Center (LRC). "In fact, RAID is one of the highest priority items in the entire Army, right behind the Mine Resistant Ambush Protected (MRAP) vehicle," said Straube. "Bottom line, RAID saves Soldiers' lives, and there's nothing more important than that."

To save lives, though, RAID must operate reliably and be maintained effectively and efficiently. One of the RAID Team's recent successes involved the heart of the system — the camera — an expensive and delicate item. Unexpectedly high failure rates resulted in long repair cycle times and declining operational readiness rates, according to Straube. Of greater concern were our Warfighters, who relied on RAID to provide situational awareness, force protection and border surveillance.

"Something had to be done to fix this, and we had no time to waste," said Straube. The RAID Team tackled the problem by gaining access to the contractor's logistics support website and tracking each and every camera from the manufacturer to the field and back again.

The RAID Team developed a database to identify trends and find bottlenecks. They analyzed and tracked not only the number of failures, but also the causes. They discovered that some of the cameras that were returned had not actually failed, which clogged the supply system and slowed down cycle times. As a result, the RAID Team developed and sent to theater a test set to check and confirm camera failures in the field, virtually eliminating the number of mission capable cameras returned for repair.


*U.S. Army Photo*

*A RAID aerostat system readies for launch*

The RAID Team also worked to increase the number of spares in theater to further improve readiness. As a result of their efforts, cycle times continue to decrease, spare cameras entered the pipeline to reduce down time and readiness rates soared.

Another challenge involved the generators used to power the RAID system. When the generators started failing at an alarming rate, the RAID Team gathered information and learned that the users were not performing required Preventive Maintenance Checks and Services (PMCS) on the generators and were not notifying FSRs when a generator failed. The team took immediate action to ensure steps were taken to perform PMCS, establish an FSR notification process, and ensure appropriate documentation and reporting took place.

When not engaged in urgent challenges, the RAID Team provides continuing proactive support and assistance to the field. Daily, they track trends, log logistics actions, seek out problems, and resolve them.

"Not a day goes by that the team isn't reminded of who they support and why, which keeps them motivated and focused," said Straube.

The RAID Team knows that keeping readiness rates high is an ongoing effort. "The RAID Team is
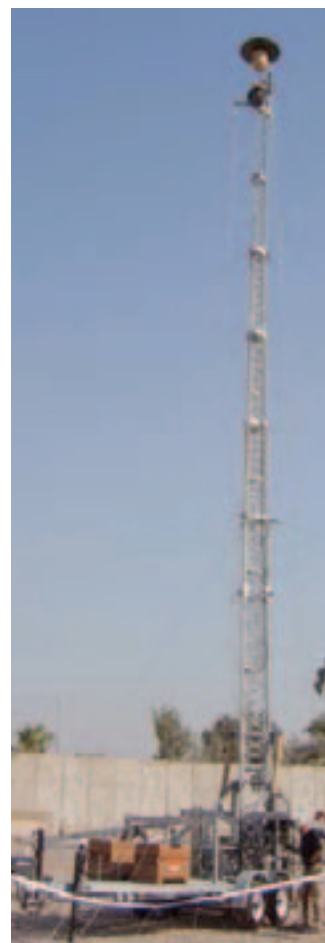

*U.S. Army Photo*

*Testing a RAID tower system prior to deployment.*

one of the hardest-working teams in the Army," Straube said. "The payoff for hard work is saving lives, and there's no greater reward than that."

# Newer batteries lighter, last longer

## Unaware of benefits, troops still buy old cells

**By Edric Thompson**
*CERDEC Correspondent*

The U.S. Army Power Division of the Communications-Electronics Research, Development and Engineering Center's (CERDEC) Command and Control Directorate (C2D) has improved the capabilities of its disposable and rechargeable batteries.

The BA-5390 disposable and the BB-2590 rechargeable batteries are lighter, have more capacity and are sitting unordered in the Army's inventory. Both batteries are used in 71 pieces of equipment for Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) systems; some of these include the SINCGARS and SATCOM/HF radios, the M-22 Automatic Chemical Agent Detector Alarm (ACADA) sensor, the Ruggedized Handheld Computer Toughbook, and the Javelin CLU.

As part of Army Power's campaign to inform units throughout the Army, the batteries have been featured in CERDEC displays at events such as Association of the United States Army (AUSA), the Sergeant Major of the Army Conference and the Defense Manufacturing Conference.

"We've found that many units are still ordering the older technology because they aren't aware of the improved capabilities of the newer models," said Rafael A. Casanova, team leader, Battery Support Team. "In many cases, those ordering the batteries look at the lowest price by the national stock number (NSN); however, they don't realize that the newer technology is a better buy in the long run even though it may cost a little more per



U.S. Army Photo

*Rafael Casanova (right) of CERDEC Army Power's Battery Support team discusses the latest advancements in battery technology with Dr. Thomas H. Killion, Deputy Assistant Secretary for Research and Technology/Chief Scientist, U.S. Army.*

unit. We want supply personnel to know their options and the benefits of each battery so they can properly factor mission, price and the technical characteristics of the needed power source."

The BA-5390 disposable battery (NSN 6135-01-517-6060) weighs three pounds and has 60 percent more capacity than the BA-5590, a battery many units are still ordering.

"It would take seven BA-5590 disposable batteries to support a SINCGARS ASIP Radio during a seven-day mission," said Casanova. "However, the same mission could be accomplished with three BA-5390 disposable batteries, thus reducing the Soldier's weight by 6.7 pounds and reducing the overall cost by 60 percent."

The BB-2590 rechargeable battery (NSN 6140-01-490-4316) weighs .7 pounds less than the frequently ordered BB-390 and has 70 percent more capacity. Similarly, it would take five BB-390 rechargeable batteries to support the SINCGARS ASIP Radio during a

seven-day mission, but only three BB-2590 rechargeable batteries, thus reducing weight by 6.1 pounds and overall cost by .6 percent per use. Both batteries include a state of charge indicator that allows Soldiers to see the remaining capacity.

Soldiers conducting missions in mountainous terrains, such as Afghanistan, will need to rely on batteries to power equipment and won't always have the luxury of daily resupply, said Michael Brundage, chief, Power Application branch.

"Units need to look more closely at the long-term, life-cycle cost benefit of buying higher-capacity batteries. Initially, they may seem like they're more expensive, but the units will end up saving money and garnering additional benefits," he said. "Greater capacity means buying and carrying fewer batteries. The reduction in cost will allow funds to be used for other resources and equipment; the reduction in volume and weight will free up more space, allowing them to carry other equipment that will allow them to increase their capabilities."



U.S. Army Photo

*The BA-5390 disposable battery has 60 percent more capacity than batteries units still order.*



U.S. Army Photo

*The BB-2590 rechargeable weighs .7 pounds less than the frequently ordered BB-390 and has 70 percent more capacity.*

# ODIN Redux

PREPARE



Courtesy Photo

# Aircraft 'thickens' ISR in the sky, protects Afghanistan 'Ring Road'

**By Brandon Pollachek**
*IEWS Correspondent*

A technology that has proven successful in Iraq in addressing counter-improvised explosive device (IED) operations, is scheduled for introduction into the Afghanistan theater of operations this spring.

The Medium Altitude Reconnaissance & Surveillance System (MARSS), which Program Manager Aerial Common Sensors (PM ACS) manages, will be a part of an Operation Enduring Freedom (OEF) version of Task Force ODIN (Observe, Detect, Identify and Neutralize) in conjunction with the recent intelligence surveillance reconnaissance (ISR) surge.

MARSS is an asset capable of providing electro optic/infrared (EO/IR) imagery to the tactical ground commander. The system traces its history back to the late 1990s as a quick reaction capability for operations in the Balkans to provide additional ISR/RSTA (reconnaissance, surveillance, target acquisition) capabilities.

"The specific reason Task Force ODIN in Iraq was established was on the basic premise of taking back the roads by providing ISR or RSTA coverage over an aimed area of interest by putting 'eyes in the sky'," said COL Rob Carpenter, PM ACS.

The recent ISR surge has served as the impetus for MARSS increasing its presence in OEF as a part of Task Force ODIN. "The intent is to thicken the ISR network within OEF," said Carpenter. "They (Department of the Army) looked at the MARSS program that we had over the past five years and recognized that it has really matured in Iraq and, (they) are using that as a blueprint elsewhere."

In a recent briefing outlining strategy for OEF, Pentagon Press Secretary Geoff Morrell said, "We are going to flow in -- and have begun to flow in -- a lot of additional ISR assets.

"You're going to see a whole Task Force ODIN set up in Afghanistan with four platoons with an array of ISR assets to better help the commanders on the ground particularly protect the Ring Road, which is such a vital lifeline in Afghanistan for commerce and transport and governance."

A combination of MARSS aircraft and its protégé, the Airborne Reconnaissance Multi-Sensor System (ARMS), have seen action in both theaters of operation utilizing various aircraft.

However, the aircrafts earmarked to be deployed for Task Force ODIN Afghanistan will be uniform. The new systems are currently going through various stages of testing and integration in preparation for their initial deployment.

*Medium Altitude Reconnaissance & Surveillance System aircraft are scheduled to deploy to Afghanistan as a part of Task Force ODIN.*

A benefit of directly deploying the new platforms is that the National Guard pilots and operators who have been tasked with the MARSS mission will be able to train on the actual systems they will fly in combat. PM ACS is responsible for providing limited pilot training through its contractors as well as training for the "backseaters" who will have to learn how to operate the Prime Mission Equipment (PME).

In addition to providing the platform and training for MARSS crews, PM ACS is also responsible for the architecture of the ground station known as the Airborne Reconnaissance Support Team (ARST).

ARST serves as the focal point for the processing exploiting disseminating (PED) piece of the MARSS ISR/RSTA mission, which essentially takes the information gathered by the air platform and turns it into contextual information for utilization by the ground tactical commander.

As a part of Task Force ODIN, along with a number of unmanned aerial systems (UAS), MARSS fulfills an important role in manned-unmanned teaming. "When you are in this close proximity to the ground tactical commander, its having that crew with a direct eye on the target and that sensor operator with direct communication to him, feeding him full-motion video, feeding him direct voice comms, in real time that is the goodness of having a man on board," stated Carpenter.

The cost and the rapid acquisition of the MARSS system is also seen as a major advantage and meets an adaptation in the thinking throughout the DoD in how it is approaching the Global War on Terror.

"I asked whether it made sense in situations where we have total air dominance to employ lower-cost, lower-tech aircraft that can be employed in large quantities and used by our partners.

This is already happening now in the field with Task Force Odin in Iraq, where advanced sensors were mated with turboprop aircraft to produce a massive increase in the amount of surveillance and reconnaissance coverage," said Secretary of Defense Robert Gates.

The newest batch of MARSS aircraft will incorporate communication intelligence (COMINT) sensors as well as an ability to feed directly into the Distributed Common Ground Station-Army (DCGS-A), thus allowing for greater exploitation and dissemination of its actionable intelligence.

# Army measuring support to Marines

**By Edric Thompson**
*CERDEC Correspondent*

They say, "Close only counts in horseshoes and hand grenades"; this is especially true in modern warfare where precision is everything. If a weapon or piece of equipment is off, it could alter the outcome of the mission – hence the importance of proper calibration.

Without mobile calibration facilities, missions would be delayed because essential equipment would have to be sent back to manufacturers in the United States.

So when the Marines needed to rapidly reset the 18-year-old design for their facilities, the Command & Control Directorate's (C2D) Quick Reaction and Battle Command Support (QR&BCS) division utilized their Pro-E and virtual prototyping capabilities to insure accurate design and accelerated delivery.

Based on requirements and Marine input, QR&BCS quickly came up with a user-friendly design that was reconfigurable, durable, dependable and secure.

"We took it from scratch," said James G. Leary, project lead. "The system that we have has no resemblance whatsoever to the system that's currently fielded."

The first challenge was providing more workspace. To do so, QR&BCS added a fourth container/station to the design and incorporated an all-enclosed Deployable Rapid Assembly Shelter (DRASH) tent system, which allows for flexible rearrangement of stations. This new configuration is also more portable, able to be assembled or taken down in 15 minutes.

Within the containers, QR&BCS maximized space by installing adjustable rack systems, sliding drawers, retractable countertops, swiveling brackets for flat-screen monitors, a cable management system that keeps cables from kinking and disconnecting and multiple patch panels with USB and LAN cable connections so users no longer have to take equipment out of the rack; they simply plug the equipment they need to calibrate into the panel.

Leary's team integrated the new calibration equipment specified in requirements and conducted a thermal analysis in each container to determine the size of the overall power grid needed to power the facility.

Because temperature is so critical to accurate calibration, Leary's team proposed additional features to provide needed controls.

"The temperature needs to be within plus- or minus-three degrees when calibrating," he said. "The older design just has a dial that makes it hotter or colder; it's not really tied into temperature at all. So we installed an environmental control unit in each container to provide automatic temperature control."

LED lighting was also proposed because it gives off less heat and no electro-magnetic interference (EMI), which can be read by the enemy.

Moreover, each container is EMI protected: doorways have metal grids, entry panels for cables have filters, and patch panels have EMI seals as well.

Before any work was done, QR&BCS employed their Pro-E and virtual prototyping capabilities so the Marines could view the design and provide feedback prior to fabrication.

"We don't want to be in the embarrassing situation of having to say, 'Oops, it doesn't fit,'" Leary said. "Thanks to these capabilities, our users were able to assess equipment location, rack layout and man-machine, interface requirements before the prototype was built."

The Pro-E CAD tool is used for design, development, fabrication and integration of Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) equipment and other mission-critical items into ground- and airborne-based platforms.

The 3-D design model created in Pro-E is used in the virtual prototyping lab so designers and customers can interact with the 3-D virtual prototype, checking form, fit and function. After the design has



Photo by Edric Thompson

*Marine CPL Tyler Mckeen, calibration technician, Combat Logistics Company 35, Combat Logistics Regiment 35, Marine Corps Base Hawaii, calibrates a torque wrench during his evaluation of the facility.*

been approved, the 3-D image is translated into machine language and sent to the QR&BCS fabrication shops.

The result is significant reduction of design time, minimal rework and accelerated fabrication.

"Pro-E and virtual prototyping are important to the reset process," said Edward Lye, chief, Battle Command Mechanical Design branch. "In times of conflict, engineers can quickly and easily redesign systems or insert new features to meet the users' needs."

After conducting a limited user evaluation (LUE) Nov. 3 to 7, 2008, to see if the system was operationally effective, Marine Corps evaluators approved the prototype, calling it a "definite improvement."

"Compared to the other calibration facilities I've worked in, this is top-of-the-line and has a lot of great improvements that are definitely going to help us in the long run. The setup is better: we've got

a lot of people having to work in a small area, and this facilitates that," said CPL Billy Harrell, calibration technician with the 1st Maintenance Battalion, Combat Logistics Regiment 15, Camp Pendleton, Calif.

"It's a much easier, contained space to work in," said CPL Tyler Mckeen, calibration technician, Combat Logistics Company 35, Combat Logistics Regiment 35, Marine Corps Base Hawaii. "This allows us to be deployable and do our job."

Additional feedback was provided to QR&BCS for final modifications to the system prior to its scheduled shipping to Albany, Ga. by the beginning of March 2009. Once there, all the equipment within the containers will be recalibrated prior to the final user evaluation, which is proposed for May, at Camp Pendleton, Calif.

# Depot planning to build on success

**By Kevin Toolan**
*Tobyhanna Public Affairs Officer*

Tobyhanna Army Depot's strategic planning process is creating the roadmap that will enable Tobyhanna leaders and personnel to more effectively meet the future needs of the Joint Warfighter. The latest plan, nearing finalization, builds on earlier plans that guided Tobyhanna to its current position as the premier C4ISR logistics support center in DoD, says Frank Zardecki, Deputy Commander.

Those plans positioned Tobyhanna for success in the defense base closure process and in the tumultuous years since 9/11, Operation Enduring Freedom and Operation Iraqi Freedom, he says. They resulted in workload growth, substantial investment in infrastructure and equipment, and in addressing a surge in employee retirements and new hiring, introducing Lean Six Sigma across the workforce and in implementing a team-based business model that increased employee awareness of the depot's key missions and metrics.

"Our updated vision is to be the DoD command, control, communications, computers, intelligence, surveillance and reconnaissance (C4ISR) logistics support center of choice for Warfighter readiness and transformation," said COL Ron Alberto, depot commander. "With only subtle word changes we recognize our substantial evolution from traditional depot maintenance to a broader worldwide readiness mission."

"We have aligned our vision and our strategic planning process with the visions of CECOM LCMC and AMC, and to contribute to Army and DoD transformation," says Janice Gimbi, one of the planning process team members and chief of staff. "We are using Lean methodologies to develop and track the actions that ensure the plan succeeds."

The plan identifies seven focus areas with specific goals to support the depot vision. The focus areas are:

Leadership: To develop leaders who care for people and who set expectations which create a culture for continued success

Human Capital: To recruit, train, recognize and provide career progression opportunities to retain a well qualified and empowered workforce

Operations Management: To effectively use best practices and leading edge systems to make smart decisions

Technology: To exploit emerging technologies to effectively support the next generation of C4ISR systems

Business Development: To implement a customer-focused and integrated strategy that pursues business opportunities in all mission areas

Infrastructure: To design and build facilities which provide a reliable, flexible and safe work environment. New structures will be energy efficient and utilize "green" technology

Continual Growth: To expand the worldwide enterprise that today consists of 67 forward operating locations.

Subgroups from the team are using Lean methodologies to identify what needs to be done to move forward from the current state of each focus area and to include developing metrics and action plans for each area to track the depot's progress over the plan's three to five year life span.

"Tobyhanna is preparing for the infusion of future technologies such as advanced integrated sensors, wireless smart sensor networks and Very Wide Area Satellite Networks associated with the collection and transmission of combat C4ISR information," says James Mangino, Director of Production Engineering and also a member of the strategic planning team. "The increased use of Surface Mount Technologies, including Ball Grid Arrays, continues to proliferate on new systems and the impact of nanoscale engineering/nanotechnology will shape our future," he adds.

"Strategic planning offers several benefits. It enables us to apply resources where they are best utilized, it permits us to develop the skills and to acquire the technology and facilities to meet new Army and DoD requirements for C4ISR systems, and it will give us an integrated approach to market our capabilities to current and future customers."

"For our employees, it also establishes a framework where they see how their role and their jobs contribute to our overall organizational performance. Through the use of Lean and our established business processes, our strategic focus areas match our business objectives and metrics," Gimbi explained.



Photo by Steve Grzezdzinski

*Ken Frederick performs an operational test on an AN/APX-72 Identification Friend or Foe radio frequency section at Tobyhanna Army Depot.*

James Durham, program manager, test measurement diagnostic equipment, Marine Corps System Command, said he is pleased with QR&BCS support of the facility reset.

"[Reset] is like an onion with layers; this is a very complex system with many requirements," said Durham.

"Being a prototype, it has had some challenges that they've had to react to with great deliberation, but they've been innovative and quick to respond to every demand we've requested," said Durham.

"QR&BCS has provided us with accurate information so we can make the best decisions for our product."

The calibration facility is the latest in a series of projects QR&BCS has successfully delivered to the U.S. Marine Corps Systems Command, the most notable being the Tactical Imagery Production System, which provided tactical printing, reproduction, photographic and video-graphic capabilities for the Marine Expeditionary Forces in support of Psychological Operations and Intelligence and Information Operations.

"CERDEC has always been very good to work with," said Marine Master Sgt. Amy Pearson, Marine Corps Liaison, Naval Service Warfare Center, Corona, Calif.

"They're very responsive to any needs we have. Any time an issue arose, they were right on it trying to help us figure out what solution would be best. I can't complain at all about the service they've given us; it's been outstanding," said Pearson.

Integration for the second calibration facility began January 2009, at Fort Monmouth, NJ; the third system is scheduled to begin March 2009, at QR&BCS facilities in Aberdeen Proving Ground Md.

**C4ISR NEWS**

# Expo demos night vision successes

**By Erica Fineman Bertoli**
*CERDEC Correspondent*

Department of Defense military and civilian leaders and members of Congress and the defense acquisition community attended the 2008 Executive Night Vision Technology Exposition at Fort Belvoir, Va., Oct. 1.

Hosted by the U.S. Army Research, Development and Engineering Command's (RDECOM) Communications- Electronics Research, Development and Engineering Center's (CERDEC) Night Vision & Electronic Sensors Directorate (NVESD), the event provided attendees an opportunity to experience the innovation of NVESD scientists and engineers first-hand through interactive demonstrations that ranged from advanced night vision systems to cutting-edge biometric technology.

The event, which hosted nearly 200 guests, was intended to demonstrate the scope and breadth of available and emerging night vision and sensor technology.

"We wanted to showcase the very significant progress that we have made, to ensure that the whole community understands the opportunities that are available in terms of actually improving the way we fight," said NVESD Director, Dr. A. Fenner Milton.

"Thanks to the work of the research and development community, the United States holds an advantage in this time of persistent conflict. That has been accomplished by the brilliant scientists and engineers whose work was demonstrated here this evening. We must continue investing in the growth of engineers and scientists to maintain that capability in the future," said MG Fred D. Robinson, Commanding General of RDECOM.

Throughout the evening, attendees were able to speak directly to the subject matter experts present to gain understanding of the application of each technology area to the Soldier in the field.

Night vision technology has been a major part of the Army portfolio for many years. However, current innovations continue to solidify the U.S. Army as the dominant ground force in the current theater of war and throughout the world.

"The urban asymmetric warfare that we face today is one of the most serious challenges of modern warfare," said Milton. "We've spent many, many years learning how to find tanks at longer range, more quickly and so forth. But now, we're faced with large dismounted threats and ones that don't make themselves very obvious. So there are tremendous sensor challenges associated with fighting in this new environment."

According to Milton, it is this commitment to



Photo by Erica Fineman-Bertoli

*Expo attendees listen as Dr. A. Fenner Milton discusses NVESD's recent technological advancements.*

persevere in an ever-changing battle environment that drives the expansion of NVESD's technology.

"In the end, it all comes down to ensuring that we equip our men and women in uniform with the best tools to accomplish the mission," said GEN Benjamin S. Griffin, former commander of the U.S. Army Materiel Command. "The work being done by Night Vision is critical to the Soldier in the field. This technology, whether sensors, bio-metrics or night vision goggles, has a direct and tangible affect on our Warfighters' ability to accomplish the mission — day or night."

According to Milton, the range of systems demonstrated was chosen to illustrate the tremendous advances in component technology, as well as the extent to which NVESD has expanded during the past 10 years.

"It has been a very exciting period for us," said Milton. "The areas that are really new include airborne persistence surveillance, where you're providing sensor coverage over the entire battlefield all the time. We are also working on border perimeter surveillance technologies and new initiatives that exploit human signatures, sometimes referred to as advanced biometrics, in which we are looking for signatures that would distinguish combatants from noncombatants. We've started technology thrusts in explosive detection, given the threat of IEDs and particular signatures that can be available there."

As CERDEC Director Gary W. Blohm toured the Expo, he noted the innovative application of advanced sensor technologies to solve some of the pressing challenges Warfighters face today.

"From counter-IED developments that allow faster, more effective ground and air-based IED (improvised explosive device) and landmine detection and neutralization capabilities, to persistent surveillance technology that affords the Warfighter real-time assessment of the environment to allow for increased situational awareness in the field, the work of NVESD is critical to the efforts of our Warfighters," said Blohm. "Continued investment in this type of technology is nothing less than an investment in the security of our nation."

CERDEC, a subordinate element of RDECOM, has six directorates, including NVESD; each is dedicated to developing technology to aid the Warfighter on the ground.

"CERDEC has a very broad mission of exporting electronics, communications, and we're

Photo by Robin Williams

*MG Reeves speaks to Susannah Dunbar about hyperspectral technology.*

# Pentagon CTSF accreditation a first

**By David G. Landmann**
*CTSF Correspondent*

FORT HOOD, Texas – Fort Hood's Whitfill Central Technical Support Facility (CTSF) became the first accredited member, and the hub, of the Pentagon's new Federation of Net-Centric Sites (FaNS) in a brief ceremony here Jan. 27.

The CTSF's director, COL Steven G. Drake, and Edward Thomas, deputy to the commanding general, CECOM LCMC accepted a Department of the Army (DA) Chief Information Officer/G-6 certificate of accreditation from Joan Smith, chief of the Army's System of System Integration and Certification Division.

Smith said it was no accident the CTSF became the Army's first fully-accredited FaNS facility and test agent in the Warfighter Mission Area.

FaNS, Smith explained, will eventually be comprised of a network of testing facilities, each with its own particular area of expertise, and each working toward the ultimate goal of complete interoperability between Army-joint military software and hardware systems.

She described FaNS as "a relationship of disparate (system integration laboratories) working together to get things done, and to get things done quickly".

The CTSF is considered the hub of the FaNS system because of its successes in developing software interoperability testing procedures and because of its ability to define the impact of the growing number of digital systems being made available to the Warfighter.

"Soldiers have always been put first by the CTSF," Smith said.

"You," she added, addressing a gathering of the CTSF team during the presentation ceremony, "have always gotten it done because of the cooperative attitude that has always existed here."

Smith congratulated the CTSF for its growth


U.S. Army Photo

*Joan Smith, chief of the CIO/G-6 System of Systems Integration and Certification Division, addresses leaders of Fort Hood's Whitfill Central Technical Support Facility (CTSF) at a recent ceremony marking the CTSF's accreditation as the hub of the newly-formed Federation of Net-Centric Sites (FaNS).*

from a small software test station in 1996 into a facility recognized as a strategic Army asset.

"The CTSF has matured in many different ways since 1996. All of the methods (it) pioneered have transitioned into a formal thing called distributive testing," she said.

Smith said a CIO/G-6 team has to date, identified six sites across the nation as FaNS facilities. They have yet to meet the seven accreditation standards set by the DA.

"It was important because of the CTSF's leadership in the interoperability testing field, that it be established (as a FaNS facility) before the other locations," she said.

All FaNS facilities will eventually be joined by a digital network to expedite interoperability testing of the Army's software and hardware systems. "We're doing this because the Soldiers need to know that the stuff in the hands will work," she said. "The CTSF is the hub of the FaNS network

because of the expertise it has demonstrated in this (testing) arena."

Thomas added to Smith's remarks saying FaNS will be an exercise in efficiency.

"FaNS is going to help us test interoperability more quickly," Thomas said.

"As our system of systems continues to grow, achieving interoperability becomes a more time-consuming and expensive process. It is incumbent upon us to make this effort more efficient and effective," he said.

The CTSF was organized in May 1996 under what is now Program Executive Office, Command, Control, and Communications Tactical (PEO C3T).

The CTSF was originally designed to provide a location for the rapid development, integration, and deployment of the Army Battle Command Systems (ABCS) which were designed to digitize the Army's battle command and control capability.

As digitization of the Army's warfighting capability grew and matured, the CTSF mission expanded to integrate and test nearly 100 systems, a number that is expected to grow as more Army systems become network-enabled.

In April 2007, the CTSF was reorganized under the Army Material Command, CECOM LCMC for command and control, with oversight from Headquarters Department of the Army, DA CIO/G6 for interoperability certification purposes.

The CTSF employs approximately 226 military, government civilian, and defense contractors as its core workforce.

The CTSF campus covers more than 264,000 square feet, of which more than 40,000 sqare feet is dedicated to software integration and Army Interoperability Certification (AIC) testing.

The AIC testing is the cornerstone of the Federated Army Net-Centric Site construct; AIC testing affords the Warfighter confidence that Army Battle Command systems are integrated with other systems on the tactical network.

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**"CERDEC,"** *From Previous Page*

just part of it," said Milton. "We deal with sensors associated with electro-optics and sensors associated with finding targets on the ground and underground. What we really expect is that the information we generate will form part of the network that CERDEC is responsible for."

Blohm attended the Expo along with representatives from the other CERDEC Directorates, including Greg Lorenzo, chief of CERDEC's Space and Terrestrial Communications Directorate's (STCD) Systems Engineering, Architecture Modeling & Simulation Division.

"I saw a demo like this a couple of years ago, and Night Vision has come a long way. There

was a lot more technology here tonight than there was even two years ago, and it's very impressive," said Lorenzo. "This technology is leading edge, and it affects a lot of different people, not only military. So we need to work toward integrating all of these sensors with communication systems and command and control for C4ISR capabilities."

Ultimately, the Night Vision Executive Technology Expo was intended as an opportunity for decision makers to see the critical work being done in the NVESD labs.

"Of course, we're looking for support for transitions of this technology," said Milton. "I think

that if people come and see these pieces of equipment and understand the special advantages that they provide, that the opportunities for transitions will be increased."

And as with all of the work done throughout CERDEC, the ultimate beneficiary of transitioned technology is the Soldier, Blohm said. "CERDEC is, above all, dedicated to the development and deployment of systems that will enhance the Warfighters' ability on the ground," said Blohm. "The work on display here tonight is a credit to Fenner's leadership, the talented men and women of Night Vision, and our important partnership with industry and other government labs."

**RESET**

# ARMY IMPERATIVE: RESET

Continue to *reset* our Soldiers, units and equipment so they will be ready for future deployments and contingencies.

*"What we're trying to do is to get units to come back and go into "dry dock" for six months. We want to take that six-month period to get the Soldiers and leaders back in shape, do the changes of command, reestablish property accountability, probably take on new equipment. But at the end of that period, you're going to be equipped at a level that you can begin training for whatever's next.*

*I think you'll see that will become the basis of our expeditionary Army, the ability to bring ourselves back, refit in a very structured, methodical, even-tempo'd way so at the end of that we're ready to go forward and do some other things."*

*CSM Brian Connie (left) and CSM Stephen Libert listen to the words written above, which were delivered by Chief of Staff of the Army GEN George W. Casey Jr. during the Sergeant Major of the Army Nominative Sergeant Major and Senior Enlisted Advisors Conference at the Centennial Club at Fort Bliss, Texas.*

Photo from www.army.mil

# Unit Set Fielding process becoming gold standard for equipping troops

**Josh Davidson**
*C3T Correspondent*

With a standardized set of processes spanning the entire organization, Army Team C4ISR can more rapidly equip Soldiers with the mission critical capabilities they need.

Processes, such as the five-phased Unit Set Fielding (USF), have improved its personnel's ability to support, field equipment to and train Soldiers. Initiated by the Army's Program Executive Office for Command, Control and Communications-Tactical (PEO C3T) in fiscal year 2006, USF is a repeatable process developed in response to the increased number of units receiving its equipment.

"As we started rotating units into the combat theater in support of the Global War on Terrorism, it became obvious that we needed to create repeatable processes and lean them out, so that we could spread the wealth of digitization across the Army," said MG Nick Justice, PEO for C3T.

Through USF, the U.S. Army and the organizations of the CECOM Life Cycle Management Command (LCMC), simultaneously provide Warfighters with each capability they need to perform their mission in combat. This means providing the Army Battle Command Systems (ABCS 6.4), the communications systems, power, network and enablers — all at the same time.

Originally, USF was managed by project managers from the PEO C3T. Today, the PEO C3T's Project Manager, Command Posts (CP) leads Phases I to III, while the CECOM LCMC Logistics and Readiness Center manages Phases IV and V.

The five phases of USF are:
**Phase I:** (planning): During detailed fielding and New Equipment Training (NET) planning.

One major role of the Phase I representatives is to develop a comprehensive Battle Command USF schedule and program. During Phase I, a synchronization conference is instrumental in assisting the unit as it develops and assesses the battle roster it is using at the time.
**Phase II:** (execution): During fielding and training operations. Phase II, the Battle Command System of Systems Integration Training Team (BC SoS ITT) trains the unit on how to establish the command post and integrate its individual systems into a system of systems.
**Phase III:** Reception, Staging, Onward Movement and Integration (RSO&I): Deploying or at an Army combat training center where units

receive their training prior to deployment.

**Phase IV:** (deployment): For support of units when they are deployed.

**Phase V:** (Reset): During the unit's Reset upon return from deployment. As part of Phase V, Reset, a unit has to conduct several significant actions beginning six months prior to redeployment. This process was formerly briefed to the unit by several different organizations in the Army.

Now, through Phase IV and V processes, the CECOM LCMC Logistics and Readiness Center (LRC) coordinates this effort by gathering each of the different organizations that touch a unit into a coordinated effort.

The Phase V Synchronization Conference occurs after redeployment and is a process through which PM Command Posts and the LRC gather the information to assist a unit with Reset activities and new fieldings, refurbishing and the upgrade of equipment.

The involvement of other organizations such as the CECOM LCMC and Army Materiel Command (AMC) is "incredibly important" to USF and the critical role of sustaining units after fielding capabilities to them, Justice said.

"One of the benefits of having the LRC lead those two phases is we have a command structure out there in AMC that does sustainment in the field," Justice said. "We are leveraging AMC's sustainment structure to do the phase IV and phase V operations for us. And, frankly, I need to integrate with them anyway, because this is a cycle; it's not a linear process."

As it began to digitize its forces, the Army was limited in the fielding of its capabilities to between two or three brigades per year. This year, it is scheduled to reach 112 combat formations.

Over time, the PEO C3T staff has learned valuable lessons from the units it supports, Justice said.

"The ability to work closely with units just makes us better," Justice said. "We learn more from units than they get from us. So it's our privilege and it's our pleasure to be able to go out and engage with them, because those guys are just super.



Photo by Jason Bock

*Soldiers from the Second Infantry Division unload equipment at the Warfighter Information Network-Tactical's Initial Operational Test and Evaluation for its Increment 1 system, held in October of 2008, at Fort Lewis, Wash.*

The PEO, for instance, has learned how to change its fielding methods to align itself with those units' businesses processes, he said.

"In the Army, our combat formations have some awesome processes, that allow them to do repeated tasks," Justice said. "These processes also allow them to push down and let people, at every level of that formation accomplish their mission."

The units are very knowledgeable of their role and function effectively from repeatable processes, Justice said. In creating USF, the PEO C3T borrowed the battle drills, which are rehearsed and mastered by units.

The PEO C3T is preparing for the next iteration of Operation TOCFEST, the first of which was held last March at Fort Indiantown Gap, Pa. TOCFEST was held to standardize the Command Post and validate the setup of the equipment that resides inside.

"The standardization of the CP is a combat multiplier and a capability that is expected under a modular expeditionary force executing combat operations under an Army Force Generation model," Justice said.

Modularity is a major restructuring of the entire Army, involving the creation of brigade combat teams that will have a common design and will increase the pool of available units for deployment. With CP standardization, one combat formation can be relieved by another combat formation by replacing a unit's Soldiers rather than equipment.

"Because the CPs are standard, the equipment in the brigades are modular and standard," Justice said. "So, I can fly in a formation and I can relieve a combat formation that's ready to come off the line and use their equipment."

Standardization allows the Army to fleet equipment and thus deploy forces more rapidly.

"I can pre-position equipment in different critical places around the world, knowing full well that the unit is trained and ready to fight with that equipment set because the equipment is not tailored just to that one formation in the Army, but to all formations," Justice said.

LTC Omar Jones, of the 2nd Stryker Cavalry Regiment, recently took part in the Reset phase of USF. The regiment completed the majority of the process before a recent return from Iraq.

In its previous AirLand Battle doctrine, the Army provided a doctrinal template which Soldiers used to predict its enemies' actions, Jones said. The Commander then applies this to his or her analysis to adapt that template to the specific unit and conditions.

The CECOM LCMC and PEO C3T staff followed a comparable process where they put forth a template for how they planned to field and support a unit, Jones said. The plan was then shown to a Commander who would then decide how to modify it for the specific requirements of his or her unit.

Jones was most impressed by two aspects of USF, the first being the holistic approach to fielding. "That makes it so much more effective and efficient from the unit perspective; having that model that is already laid out for you," he said.

The second is the validation process, which gives a unit confidence to know that expert support representatives will be with them from the time each Army Battle Command system is turned on. Those representatives were present when Jones' unit first reached Ku

**RESET**

# Computer engineer supports Southwest Asia

**By Delle C. Lambert**
*USAISEC Correspondent*

As a deployed civilian, Cheryl Jobe endured the heat and sand storms of Southwest Asia while living in the modest comforts offered at Camp Arifjan, Kuwait. She was deployed there as a Civilian Computer Engineer for the U.S. Army Information Systems Engineering Command supporting Southwest Asia (Theater), 401st Army Field Support Brigade.

Her primary mission was to lead and engineer the conversion from an old Logistics Information System (LIS), Standard Depot System (SDS), and its associated processes, to a newer LIS, Standard Army Retail Supply System (SARSS), and more efficient processes. The requirement for this conversion was the need to speed up the recovery of damaged equipment out of Iraq and Afghanistan for depot-level overhaul (retrograde) in the continental United States.

The old SDS system had not performed well and the Army Materiel Command (AMC) was not meeting its goals for retrograde or for equipment accountability, resulting in millions of dollars of un-repaired and lost equipment stacking up in the yards in the theater of operations. In order to establish a SARSS pilot demonstration, she extended her original 179-day deployment to another 179-day deployment.


U.S. Army Photo

*Cheryl Jobe, USAISEC computer engineer, sits in a humvee during her deployment to Kuwait, May 17.*

Converting to SARSS would expedite the repair and tracking of millions of dollars of military equipment in theater. Jobe was instrumental in gaining approval from the Army Acquisition Support Command commander, to initiate a Lean Six Sigma project to address the conversion.

"As an engineer with the Information Systems Engineering Command, I witnessed first hand the importance of a well designed Logistics Information System in the field. A comprehensive, well tuned system will actively facilitate the optimal equipping of the Warfighter and the man-

agement of expensive Army equipment. But without one, the Soldier must revert to time-consuming, error-prone manual methods," said Jobe.

During her deployments, Jobe worked approximately 330 hours-per-month, sometimes doing manual data input and retrieval. She identified, however, Standard Query Language queries to access the data, which reduced the manual process and eliminated intermediate steps. Jobe researched and assessed three competing retrograde process solutions -- SARSS, Modified SDS, and a custom solution written by AMC's Logistics Support Activity.

Jobe's second deployment ended before the Lean Six Sigma recommendation was determined. Her software engineering experience and expertise was a great value to the project. She was recognized with the Army Superior Civilian Service Award, signed by MG Radin.

"I gained an appreciation of the contribution that civilians and contractors can make. Logistics support is an area where civilians and contractors can get actively involved and free up the Soldier to do the true war-fighting mission work," said Jobe.

After returning from Kuwait, Jobe accepted a Permanent Change of Station to Germany to support the United States Army Intelligence and Security Command.

wait in 2007 and during their arrival in Iraq in the fall. They remained present to ensure that each system plugged into the network functioned properly and that communications were possible among separate Command Posts.

The fielding team was present each step of the way to provide invaluable assurance that the proper tools and reach back were available in the event of an issue, Jones said.

The validation process was comprehensive and ensured the true interoperability and network functionality of each system after fielding, Jones said.

Achieving this would not be easy without the holistic-based USF process, he said. The confidence attained towards bringing the systems into combat by working with the CECOM LCMC and PEO C3T representatives was a benefit, he said.

Jones, whose unit recently concluded the entire USF process with the Reset phase after its deployment to Iraq, described the transformation from phase to phase as "seamless." Jones said that the Reset process was already coordinated for his unit prior to entering that phase.

"It really was in my mind a partnered effort all the way through and I felt very comfortable with the way it proceeded," he said.

Partaking in the entire process gave Jones the chance to witness Army Team C4ISR equipment in multiple life cycles. Reflecting upon this, Jones called the PEO C3T and CECOM LCMC "truly synchronized."

"It gave me one point of contact and one organization to go to that really coordinated all of those other project managers out there working on Army Battle Command

Systems or various C4 systems and to me that was a great advantage," Jones said.

For Jones, USF made identifying an appropriate point of contact, amongst the numerous agencies he coordinated with Armywide, a straightforward process.

Jones called the civilian field support representatives provided by PEO C3T and CECOM LCMC "invaluable." The unit's regimental S3 and Sergeant Major "absolutely embraced them," he said. "We often called them Soldiers in khaki pants," he said. Throughout the process, the digital systems engineers and field support representatives were involved closely with the unit's S6 shop, he said.

Typically, it was the Soldiers who would repair systems and support a squadron's headquarters. However, many times, they obtained

expert system advice from the civilian support staff.

During Reset, much of the responsibility to synchronize Soldiers' efforts falls on the brigade combat team itself, Jones said.

This is the appropriate method for coordinating the schedule of the BCT, which is responsible for ensuring training dates and resources are available. The PEO C3T's assistance in planning eases this coordination effort, he said.

"The more supporting organizations that move to a Unit Set Fielding model just makes it easier for the unit to focus during Reset and training for deployment," Jones said.

For the unit's Signal Corps Soldiers and Warrant Officers, accomplishing their missions in theater would have been difficult without the support and expertise of those field representatives, Jones said.

# CEER-T: The new name in repairs

**By Jennifer Reed, Kevin J. Grimm, Kenneth Phillips and Kim Goodwin**
*Professional Briefers*

The Communications Electronics Evaluation Repair Team provides Brigade Combat Teams (BCTs) redeploying from Operations Iraqi and Enduring Freedom (OIF and OEF) with a mobile Single Channel Ground and Airborne Radio System (SINCGARS) and Night Vision Device (NVD) reset and repair capability. The team, established in August of 2007 at the request of the Army Materiel Command (AMC), is part of the CECOM-LCMC Reset Division. It is modeled after other special repair teams (SRTs) such as the Tank and Automotive Command's Small Arms Repair Evaluation Team. It has evolved over the relatively short period of time since its establishment to adapt to mission and Warfighter requirements.

## Support Function

CEER-T's mission is to support SINCGARS and NVD maintenance requirements for BCTs that have redeployed from OIF and OEF, and have entered the reset portion of the Army Force Generation Cycle, known as ARFORGEN.

The intent of the CEER-T's involvement within the cycle is to provide Reset related repair services to BCTs, receiving advanced deployment schedules from the Department of the Army's G-3/5/7 combined strategic planning offices.

The BCTs gain the ability to have maintenance and repair performed on their SINCGARS and NVDs by CEER-T at their home station and returned to the unit within 60 days. These repairs are performed to the standards cited in the 10 (operator) and 20 (unit level) series technical manuals.

This rapid maintenance transaction allows the unit to focus on activities such as field training exercises, personnel rotations and changes of command, without being burdened by a heavy mainte-nance repair schedule.

## CEER-T's Funding/Organization

The CEER-T is part of the CECOM-LCMC Reset Division at Fort Monmouth, establishing an organizational footprint in August 2007. Funded directly by the Army Materiel Command – Fort Belvoir, and the Army Sustainment Command (ASC), Rock Island Arsenal, Ill., CEER-T began its operations by planning an operational budget for fiscal year 2008. Funding was requested through AMC and ASC for several major purchase requirements as reflected below:

* $1.8 million to purchase mobile repair and storage containers (ASC)
* $66,333 for CEER-T to establish connectivity with the Army War Reserve Deployment System (AWRDS) and for seven laptops; providing field level access to (AWRDS). (ASC).
* $7 million for CEER-T to purchase, Class IX SINCGARS mission repair stock (ASC)
* Fiscal year 2008 dollars to support CECOM-LCMC's requisitioning of Class IX SINCGARS and NVD, CEER-T mission stock. (AMC)
* Fiscal year 2008 dollars to support CEER-T's hiring of DA contractor and civilian labor. (AMC).
* Fiscal year 2008 dollars to support CEER-T's operational travel costs of Class IX SINCGARS and NVD, CEER-T mission stock. (AMC)
* $1.7 Million for CEER-T to purchase SINCGARS testing equipment (ex. AN/GRM-122).

## CEER-T Resets

1). Night Vision Devices: AN/PVS-7A/B/D, AN/PVS-14, AN/TVS-5/5A

2). SINCGARS including: Receiver-Transmitter: RT-1523/A/B/C/D/E/F, Vehicular Amplifier-Adapter: AM-7239/A/B/C/D/E, RF Power Amplifier: AM-7238/A/B

## CEER-T Mission Planning

After receiving operational funding, CEER-T's project management office began developing its FY08 schedule and creating planning considerations to meet upcoming mission requirements. Opera-tional data, such as site locations and mission schedules were based on Brigade Combat Teams (BCTs) re-deployment dates to home station from OIF and OEF.

CEER-T developed Memorandums of Agreement (MOA) during the initial phases of operations, which dictated an agreement of services, signed between the CEER-T, the BCT's chain of command, and the BCT's Directorate of Logistics. These mission service arrangements include provisions for requirements, such as the mission location onsite facilities necessities, the turn-in schedule of the unit's equipment to CEER-T and the overall mission completion timeline.

## CEER-T Services

CEER-T is responsible for resetting and repairing NVDs and SINCGARS owned by the BCT to 10/20 Standards of Maintenance according to the most recent Special Technical Inspection Repair doctrine (STIR). CEER-T repairs these equipment sets onsite at the unit's home station by bringing its own Class IX parts, personnel and mobile repair capability. CEER-T repairs on average 2,300 NVDs and 1,852 SINCGARS per BCT. CEER-T reset this equipment within 40 to 60 days after it was received, enabling the unit to train with its' com



Photo by Tracey Condi

*Jerry Kapinus uses a hand-held purging device to test the AN/PVS-7B night vision goggle for leaks. Kapinus is an electronics worker at Tobyhanna Army Depot.*

**RESET**

munications gear and night vision capability several months prior to being deployed.

**Direct Mission Planning, Class IX Parts Requirements:**

After signing an MOA, the quantities of BCT-owned NVD and SINCGARS equipment sets being reset by CEER-T are forwarded to CECOM LCMC Communications Directorate, for SINCGARS, and the Intelligence Electronic Warfare Directorate, for NVDs. These directorates create parts pull listings based upon the failure rates of various NVD and SINCGARS systems. These Class IX parts are either requisitioned through U.S. Army Single Stock Fund Sites or Defense Logistics Agencies or pulled from existing pre-positioned stocks. The parts pulled for CEER-T missions are shipped to Tobyhanna Army Depot where they are combined with pre-positioned stocks and loaded into CEER-T owned MIL-STD Bicons.

**The CEER-T Work Site Options:**

**Option One**. CEER-T's electronics technicians workload and repair the SINCGARS and NVD stock within enclosed, mobile repair/storage shelters (AN/ASM 189/190 Vans) or SeaBox 40' Repair Shelters (pictured below).

**Option Two.** CEER-T technicians work indoors within facilities provided by the unit, normally the BCT, or the installation's DOL. Class IX SINCGARS and NVD parts can either be stored within the facility or within a 10' MILSTD Bicon.

**The Transportation Movement of CEER-T Equipment and Class IX parts**

The transportation movement requirements of CEER-T Class IX, SINCGARS and NVD Bicons and SeaBox Repair Shelters (FIG. 1.3) to the RESET site (unit's home station) are fielded through CEER-T's Transportation Office, through which movement documentation such as DD Forms 1149, 1348, 1384 are created and materiel movement coordinations are forwarded to the Installation Transpor-


*A CEER-T facility in Schofield Barracks, Hawaii.*

tation Offices (ITO) representing Directorates of Logistics at the shipment's origin (consignee) location. Shipment arrangements of CEER-T equipment, tools, and Class IX parts include: surface line haul movement (trucking), small parcel shipments, or for OCONUS mission requirements, the stock can be transported via United States Air Force Military Airlift.

**Mission Start Date:**

After signing the MOA and addressing pre-mission requirements (Class IX parts requisitioning, loading of parts into MIL-STD Bicons, facilities determinations); the CEER-T Program deploys mobile teams to provide on-site inspection and repair of SINCGARS radio equipment and NVDs. These mobile repair teams are spearheaded by a small management cell consisting of CECOM LCMC Department of Army civilians and contractors who together provide site management and production control support for the team.

In addition to the management element, CEER-T deploys both Night Vision and SINCGARS maintenance technicians to accomplish the work. The Night Vision teams usually consist of seven night vision technicians from Tobyhanna Army Depot (TYAD). The SINCGARS maintenance teams are made up of a 50/50 split of TYAD technicians and technicians from ITT Corporation to provide the technical skills and expertise to inspect and repair the equipment to 10/20 standards of maintenance.

Upon arrival of the team at the CEER-T mission site, setup begins.


U.S. Army Photo

CEER-T members William Sturm, left, and Alex Dunn perform an inventory of Class IX NVD parts, supporting the CEER-T reset of the 173rd Airborne Brigade Combat Team, U.S. Army Garrison, Vicenza, Italy.

Within a three-day period the site transforms from an everyday motor pool facility to a working mission facility, waiting on the SINCGARS and NVD inductions to begin. All assets being inducted are done as a maintenance transaction, using DA Form 2407s or 5988s.

CEER-T's maintenance transactions are monitored by its own internal team of highly trained personnel who track the production ratios, maintenance hours and parts consumption records of each mission, based upon manual DD 2407 entries into the Army War Reserve Deployment System.

Currently, the AWRDS system is updated at Fort Monmouth. This year, CEER-T will deploy the AWRDS system with each mission, allowing CEER-T to capture the mission activities within real time. Of the many functions in AWRDS, CEER-T will utilize the work orders feature, the personnel accounting module, the inventory and parts requisitioning abilities.

**Team Evolution**

CEER-T began as an unproven idea comprised of two Department of the Army Civilian employees, and high level guidance from AMC to create a "mobile repair team." The team's first mission began in November 2007, with only two months of planning and operations established between the team's creation, resetting the 2nd Infantry Brigade Combat Team and the 10th Mountain Division's Night Vision equipment. Today, the team employs a total of 16 Army civilian employees and contractor personnel, under the direction of Team Chief, Jennifer Reed. The team has evolved from resetting only "selected" brigade combat teams, to workloading the majority of re-deploying Active Army BCTs.

**Way Ahead**

To date, the CEER-T has supported the reset of over 38 U.S. Army Brigade Combat Teams, totaling 45,072 Night Vision Devices and 35,192 SINCGARS LRUs reset throughout CONUS and OCONUS locations. CEER-T has reset the following units: 1st, 2nd, 3rd and 10th

**RESET**

## Spectra People Power Focus: Mark Bell

# Toby technician recognized by CENTCOM

**By Anthony Richiazzi**
*Tobyhanna Correspondent*

A Tobyhanna technician supporting Warfighters in Iraq has been recognized by U.S. Central Command for outstanding duty performance.

Mark Bell, an electronics technician, earned the Army's U.S. Central Command Joint CREW Composite Squadron-One Civilian of the Quarter for the third quarter award. Bell works in the depot's Intelligence, Surveillance and Reconnaissance Directorate and is on temporary duty for the Joint CREW Composite Squadron-One.

Navy Cmdr. Brian Allen, Multi-National Division-Central officer-in-charge, presented the award to Bell.

Bell arrived in Baghdad in July for a six–month assignment as a Field Service Representative supporting the Counter Radio Controlled Improvised Explosive Device Electronic Warfare (CREW) program. He received initial training at the CREW Regional Support Center, Victory Base Camp.

"Shortly following his arrival, word was put out on the (RSC maintenance) floor that we were looking for a volunteer to fill in at Forward Operating Base (FOB) Mahmudiyah while the current FSR went on leave," said Cmdr. Adam Masten, CREW technical officer. "Mark was the only one to volunteer for this position and needed to be on-site before July 23 to conduct turnover."

Bell would fill in for a site lead, so he was also required to learn the Theater Property Equipment material management system, quality assurance and troubleshooting procedures.

Furthermore, he needed to become the resident expert on different CREW systems and related computer systems, said Masten.

Personnel at the Field Support Site at FOB Mahmudiyah support hundreds of vehicles for Multi-National Division—Central in the forward operating area.



Photo Courtesy Donald Bockelkamp

*Navy Cmdr. Brian Allen (right), Multi-National Division–Central officer–in–charge, presents Mark Bell with a citation naming him the Army U.S. Central Command Joint CREW Composite Squadron-One Civilian of the Quarter for the third quarter. The citation is from Navy Capt. John W. Smith, Joint CREW Composite Squadron-One commander.*

Masten said Bell spent the next two weeks working furiously. When he wasn't on the Regional Support Center floor installing systems, he was receiving training by the system original equipment manufacturer or theater property equipment personnel.

"He never once uttered a complaint about being worked to death," Masten noted. "Two and a half weeks later, he flew off to Mahmudiyah for what he thought would be a three week fill-in job. After a three-day turnover he was left in charge, sleeping on a cot in his workshop in unfamiliar territory."

Masten said that Bell took to his responsibilities in Mahmudiyah with the same exuberance he became known for at the Regional Support Center. He was very proactive in getting the work accomplished; completing his first two installations by himself, integrating counter radio improvised explosive device electronic warfare systems on vehicles and conducting the normal routine weekly maintenance schedule on all vehicles.

"Mark's exceptional performance was noticed by those down in Mahmudiyah and I personally received phone calls from two Army lieutenant colonels, one Navy lieutenant commander and two Army majors asking that he remain at Mahmudiyah with the return of their regular FSR," Masten said. "Due to a shift of units because of base closures, the vehicle density at Mahmudiyah increased and I was able to justify keeping a second FSR at the Warlock shop, although I would have loved to have him return here to the RSC."

Bell said that although he had several duties, the work was shared with the other two technicians when they returned.

Working hours are not set and Bell and his coworkers had to be available 24 hours a day, seven days a week. Because of the high activity of the units they support, Bell would complete equipment installations at midnight. He would also be called upon to troubleshoot systems at all hours for units about to go on missions.

Bell said the most interesting part of his job is meeting the Soldiers and learning about the different types of Radio Controlled Improvised Explosive Devices. "The most satisfying part of my job is the thanks I get from the Soldiers and knowing that this program saves lives."

"Mark has already requested to stay an additional six months, which I avidly endorsed," Masten said. "I would gladly have him work for me anywhere. He is a self-starter and enthusiastic employee whose joy and mirth at what he does is highly infectious to everyone around him. He has a very positive outlook and makes it known that he is here to serve the Soldier. If he has a twin, please send him over as well."

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**"CEER-T,"** *From Previous Page*

Infantry Divisions, 1st Armored Division, 1st Cavalry Division, 82nd Airborne Division, and various other separate support and special operations units. CEER-T is also currently performing OCONUS NVD and SINCGARS reset for the 173rd Airborne BCT at U.S. Army Garrison Bamberg, Germany. The successful performance of CEER-T enables the soldier to train, deploy and fight with mission capable SINCGARS and NVDs.

**ABOUT THE AUTHORS**

Jennifer Reed is currently the Chief of the CEER-T Branch. She has worked for CECOM LCMC for over 18 years.

Kevin J. Grimm is assigned to the CEER-T Branch Transportation Management Section. A civilian graduate of the Transportation Officer Basic Course (TOBC), he is also a graduate of Indiana University of Pennsylvania with a Bachelors of Science Degree in Criminology. He has deployed as a civilian logistician to OEF.

Kenneth Phillips is currently working in the Logistics Cell of the CEER-T Branch. Mr. Phillips is a Graduate of the University of Arkansas at Little Rock and has been employed with the Government for Three Years.

Kim Goodwin is currently assigned the Logistics Cell of the CEER-T Branch. She served 10 years in the United States Air Force and is a Veteran of OEF and OIF.

# Tobyhanna supports CEER-T repairs

**By Anthony Ricchiazzi**
*Tobyhanna Correspondent*

Tobyhanna technicians continue to complete thousands of field–level repairs worldwide on two Army systems vital to the Warfighter.

Communications Electronics Evaluation Repair Team (CEER–T) members test and repair night vision systems and Single Channel Ground and Airborne Radio Systems (SINCGARS) at stateside and overseas locations.

"The CEER-T program was developed to have reliable operational equipment available for our Warfighters to train with when they return from deployment and return them to Fully Mission Capable status prior to future deployments," said John MacCartney, a supervisor in the depot's Communications Systems Directorate.

"Units returning from the fight send their equipment to post installation maintenance sites to support their Reset requirements. CEER-T technicians are on site at those installations to support quicker turnaround of equipment than if the equipment is sent to Tobyhanna," said MacCartney

CEER-T members augment the Directors of Logistics (DOLs) at various installations in support of the Reset of SINCGARS and night vision systems. DOLs request support for SINCGARS and night vision systems. A team is dispatched after meeting with the DOLs at the installations to restore systems to the 10-20 standard, the Army Maintenance Standard, which ensures Army equipment is able to perform its wartime mission.

"CEER-T is a force multiplying mission," said COL Ron Alberto, depot commander. "It allows our technicians to sustain SINCGARS and night vision systems while Soldiers re–establish family bonds during unit block leave. When Soldiers and units return to training they return to fully mission capable equipment."

The CEER-T members work from pre-positioned vans provided by the U.S. Army CECOM Life Cycle Management Command.

The maintenance vans contain test equipment to support the assigned missions and the supply vans hold spare parts needed to support repair. The vans are staged at Tobyhanna until a requirement is generated by a customer, such as Fort Drum, N.Y.

"We are repairing AN/PVS-4, AN/TVS-5 and AN/PVS-14 night vision sights, and AN/PVS-7A, B and D night vision goggles," said Ruben Fabunan, electronics mechanic supervisor, Image Optics/Laser Branch, Electro Optics/Night Vision Division. The division is part of the depot's Intelligence, Surveillance and Reconnaissance



Photo by Tony Medici

*Zandra Kuligowski performs diagnostics testing on a Single Channel Ground and Airborne Radio System at Tobyhanna Army Depot. Technicians doing similar work at other installations have tested and repaired thousands of the radios to ready them for deploying Soldiers. Kuligowski is an electronics mechanic.*

Directorate.

Teams of seven or eight depot technicians have traveled worldwide to repair more than 36,000 systems since the mission began in November 2007. The technicians for the SINCGARS and night vision systems are supported by CEER-T site leaders from CECOM.

"We are scheduled to repair more than 156,000 systems in fiscal year 2009," Fabunan said.

Tobyhanna technicians earned accolades for repairing night vision goggles during a five-week, temporary-duty assignment (TDY) to Fort Lewis, Wash. Soldiers returning from deployment turned to 11 technicians supporting the CEER-T to Reset 2,546 monocular-style goggles—AN/PVS-14—belonging to the 4th Brigade, 2nd Infantry Division (Stryker).

Certificates of Appreciation were presented to team members Oct. 20. The team made the repairs from Sept. 8 to Oct. 10.

"We were very pleased by the support we received from the CEER-T," said CWO (3) Jeffery Heil, Reset coordinator for the Fort Lewis-based unit. "They were very professional and competent."

SFC James Williams worked alongside the depot technicians providing necessary support during the mission.

"Everyone provided stellar support to the brigade during the Reset," said Williams, NCO in charge of the 202nd Brigade Support Battalion, Electronic Maintenance Shop. "From the advance team that started the packing and shipping, to the onsite work on the AN/PVS-14s by Tobyhanna technicians, to the wrap up, we received unsurpassed support."

Technicians have repaired nearly 30,000 Single Channel Ground and Airborne Radio Systems in support of the CEER-T program.

CEER–Ts consist of three to eight SINCGARS Branch technicians from the Communications Systems Directorate. Teams have been to Forts Drum (N.Y.) Richardson (Alaska), Bliss (Texas), Bragg (N.C.), and Vilseck (Germany)

"Like the Image Optics/Laser Branch teams, our teams are testing and repairing the radios to return them to the 10-20 standard," MacCartney said.

Radios are tested and repaired onsite, and reinstalled into vehicles. The technicians are supported by CEER-T site leaders from the U.S. Army CECOM Life Cycle Management Command.

"We went to Schofield Barracks in Hawaii expecting a 45-day mission for the 25th Infantry Division, but the division needed an accelerated schedule," noted Don Suckstorff, electronics mechanic leader.

"We finished on Feb. 20, six days ahead of schedule," Suckstorff said. "The 25th was very pleased with our work."

# COMSEC reset exceeds 100k items

**By Jennifer Caprioli**
*Tobyhanna Correspondent*

Tobyhanna Army Depot employees have reset more than 100,000 secure communications items for the Warfighter, while improving processes annually.

Personnel in the Communications Security Division (COMSEC) reached a milestone in March 2008 when they reset the 100,000th COMSEC item, from the time when the program began in 2004. Technicians have since repaired another 18,000 items. The division is part of the Communications Systems Directorate.

For an item to constitute as Reset, it must be restored to combat capability, based on established 10-20 maintenance standards. Also, it must be an "end item," meaning that it is a complete system, not a component of a system.

Items reset here include electronic encryption equipment such as the KOI-18, a hand-held, battery operated paper tape reader that converts the tape into an electronic format for use by other devices. Also repaired by COMSEC technicians are the KY-100, a self-contained terminal that allows for secure voice and data communications in tactical airborne/ground settings, and the KG-175, which provides security for users who communicate over networks such as the Secure Internet Protocol Router Network (SIPRNET).

The program is a result of division personnel seeking Reset assets through the Army Force Generation (ARFORGEN) model, which is used to manage processes such as Reset and ensure the ability to support demands for Army forces.

Division personnel employ a direct exchange plan, meaning when an item needs Reset, it is turned in and depot personnel issue a restored item. The one-for-one exchange automatically replaces the Warfighter's item, eliminating the time it takes for an item to be returned, says Eugene Davis, equipment specialist and project lead.



photo by Tony Medici

*James Mangan, an electronics mechanic at Tobyhanna Army Depot, overhauls the canopy of a K-68. The K-68 is one of the secure communications devices that technicians in COMSEC Reset.*

> **"People get involved and come up with ideas, which continuously improve the process,"**
> *-- Electronics Mechanic, Stephen Waak*

If COMSEC does not have an item in stock to exchange, they will repair and return (R&R) the item. Technicians have a 60-day window to R&R items to units, he explains.

The Reset program in COMSEC is controlled by serial number and every item is tracked using the COMSEC Reset database, which began as a hardcopy spreadsheet used to track transitions. Personnel in COMSEC upgraded it in 2005 by converting to an electronic tracking system. Davis said they have continued to improve the program. In 2006 they expanded the reporting data to include the wait time of an item prior to movement through the repair cycle. He notes that personnel wanted to know when they were approaching the 60-day window.

By fiscal year 2007, personnel in the COMSEC shipping and handling department began entering tracking numbers into the database, which electronically audits every transaction and work being performed. This eliminated the time it took to perform an audit of manual paperwork, says John Williams, electronic equipment specialist. He believes that tracking the items resulted in zero lost items throughout the years.

By December 2007 the information maintained in the COMSEC database was uploaded to the U.S. Army CECOM Life Cycle Management Command's database for global visibility of Reset transactions.

"Employees here do an outstanding job. They've been involved and provide feedback through in-process reviews, refined processes and meetings," says Williams.

"People get involved and come up with ideas, which continuously improve the process," says Stephen Waak, electronics mechanic and member of the first Reset team in 2004. He notes that the process continues to improve due to employee involvement.

A technician verifies each serial number when it comes in the door. Items are placed in a container that houses 10 items. After that, the item information is used to create the shipping document that pertains to the entire container. The items are reset and the document is used to verify the quantity and serial numbers of the contents of the container. Items are then placed into storage until they are needed for direct exchange.

"The process is a well honed system and a very smooth operation," says John Mowatt, a materials handler leader in the division.

Three employees travel to the installation and perform a direct exchange or R&R, once COMSEC personnel receive a list of what a unit needs for Reset. Teams have traveled to Texas, North Carolina, Italy and Germany taking items that will be exchanged, extra boxes (for the returned items), a printer and a copier.

Four years and 87 missions later, employees have streamlined the process and applied Lean initiatives to the program, says Davis. By continuing to improve the process, equipment gets to the Warfighter more efficiently.

C4ISR NEWS



<div style="text-align:right">Photo by David G. Landmann</div>

*Test Officer Yve Sandlin, left, and Test Operator Talaya Johnson, study information generated during testing of a Software Block 2 System on one of the test floors at the Whitfill Central Techincail Support Facility at Fort Hood, Texas. The facility finalized 48 Software Block 2 Army Interoperability Certification tests in late November 2008.*

# Software Block Two tests complete

**By Whitfill Central Technical Support Facility Staff**

The LandWarNet/Battle Command (LWN/BC) General Officer Steering Committee (GOSC) made the decision in May 2007 to delay fielding of Software Block 2 (SWB2) and remain on the then currently deployed SWB1+ baseline. The decision mandated upgrades and capability insertions for SWB1+.

This Case Study focuses on the SWB2 Army Interoperability Certification Testing restart and activities by materiel developers, combat developers, AMC, CECOM LCMC, the Central Technical Support Facility (CTSF), and others to continue to mature SWB2, identify and correct interoperability issues, and successfully field and certify SWB2.

Program Managers (PMs) and vendors then began making corrections to software to provide solutions for 78 critical SWB2 deficiencies, while still sustaining and improving the deployed SWB1+ baseline. The Assistant Secretary of the Army for Acquisition, Logistics and Technology (ASAALT) took the lead in planning and conducting a confidence test in November and Decem-

ber 2007.

Record AIC test events were conducted during the spring of 2008 for all systems and platforms. TRADOC was instrumental in the preparation of mission threads to support a DA/G-3-directed Backwards Compatibility Assessment between SWB1+ and SWB2.

This was accomplished in late summer 2008. A regression test was completed in September 2008 followed by the generation of 45 reports that were submitted to CIO/G-6.

As those events transpired, it became apparent that three test floors would be required at the CTSF: One floor for the deployed baseline (SWB1+), one for the to-be-deployed baseline (SWB2), and one for the baseline being developed (now called Capability Set 11-12).

Three parallel System Engineering and Integration (SE&I) floors were also established to work with vendors and PMs as software is being corrected, developed, and integrated.

The SE&I floors provide an area where vendors, PMs, and the CTSF can work together on integration developmental testing separate from formal certification test constraints. This is done following the philosophy that it is critical that all

players focus on interoperability with other systems and platforms if Army interoperability exchange requirements are to be ultimately satisfied.

A final regression event was held in December 2008, and subsequent addenda reports were provided at the end of December. All issues have been resolved, and Headquarters, Department of the Army is now staffing the CTSF test reports and system-level, and block-level certification is expected no later than Jan. 31, 2009.

The CTSF team, in establishing three test floors and parallel testing in SE&I, along with diligence and participation, successfully accomplished this critical software development and certification objective. The Army G-3 is planning SWB2 fielding beginning in February 2009. SWB2 will provide the next generation of LWN/BC capability to the Warfighter, ameliorating numerous C4ISR functions, thus enhancing the U.S. Army in sustained engagement.

### CTSF sees landmark testing levels

Army Digitization began in the early 1990s. Army Tactical Command and Control System (ATCCS) fielding to Fort Hood divisions, the first ATCCS limited user's test in the fall of 1992, and

subsequent similar efforts revealed that horizontal system of systems integration would be a daunting challenge. Program Executive Office for Command and Control Systems (now PEO C3T) determined that a forward facility dedicated to integration and interoperability was the best way to meet this challenge. Because this was deemed to be merely a short-term effort, aimed at the five systems in the "Sigma Star," a few trailers were moved to available land north of III Corps headquarters on Fort Hood, and centrally-located between the 1st Cavalry Division and 4th Infantry Division footprints.

Early successes were measured at best, but prudence, diligence, and sometimes bizarre work demands began to bear fruit. Army Warfighter Experiments and Digital Exercises demonstrated what was possible even on the refrigerator-size common hardware that was available. Systems supporting tactical operations became "eleven plus one" when Force XXI Battle Command Brigade and Below (FBCB2) was introduced.

Digital command and control began to show promise. A solid foundation had been formed and the CTSF's emergence as a true center of excellence to support developers during systems engineering and integration, AIC testing, configuration management of the Army's deployed baseline, and technical support to the Warfighter became recognized at the highest levels and across all tactical commands.

These early efforts led directly to successes realized at the beginning of Operation Iraqi Freedom and Operation Enduring Freedom as digital interoperability expanded to include ground and air combat platforms.

Interoperability testing encompasses more than 75 systems and platforms, and 200-plus mission threads. Additionally, the CTSF tests every training and go-to-war address book (data products) reaching a milestone of the 500th such test in 2008. The CTSF now has 200 employees and PEOs provide an additional 700 personnel. Liaison officers to the CTSF represent ASA(ALT), as well as various Army staff elements and PEOs.

This unique combination of vendor, acquisition, testing, and policy expertise, provides the synergy necessary to support the entire life cycle of Army software for C4ISR systems, ground and air platforms, and unmanned systems.

To meet expanding challenges the CTSF added an additional test floor and incorporated KVM switches to maximize the numbers of systems that can be controlled by one operator.

The footprint used by the Data Products Lab has been reduced through architecture and system virtualization also reducing test time from 80 hours to a surge capability of 12 hours per address book. Research into the virtualization of the current software baseline is also underway to improve test efficiencies. In concert CIO/G6, the CTSF has also demonstrated a distributed test capability to access system specific and operational expertise where it exists such as FS at Fort Sill and AVN at Redstone Arsenal.

In the future, the CTSF mission will expand beyond the Warfighter Mission Area to all Army interoperability domains. Testing and certification is conservatively predicted to exceed 300 systems and platforms. In recognition of this expansion and enduring mission of the CTSF, the Army programmed $66 million for a permanent facility at Fort Hood.

This permanent facility will be the nucleus of a federated network of interconnected worldwide sites, using technical and operational expertise where it is located, whether it is at Fort Monmouth, Mesa, Grafenwoehr, Germany, or Bagdad, Iraq.
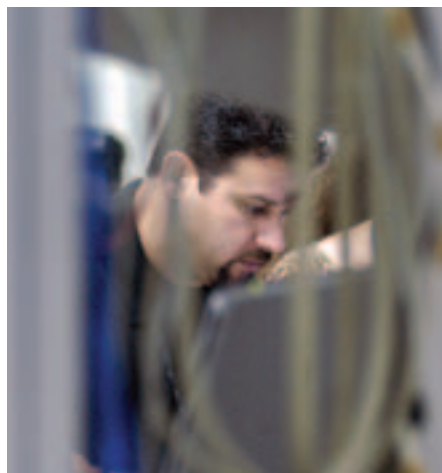


Photo by David G. Landmann

*Test Operator Lee Ferguson concentrates on his monitor during data product testing recently at the Whitfill Central Technical Support Facility at Fort Hood, Texas. Ferguson and his team members saw the completion of the CTSF's 500th data product test in late 2008.*

Exploitation of the latest technologies, processes, and test tools will continue to improve CTSF efficiency. Operational information exchange requirements will continue to drive what has to be tested. Teamwork between the Department of the Army, TRADOC, PEOs, PMs, vendors, and the CTSF will always be paramount to the success of Army information sharing. The CTSF will continue to be an interoperability guiding light, ensuring the Warfighter sees first, understands first, acts first, and finishes decisively.

Documentation tools developed to expedite completion and publication of Army Interoperability Certification test reports

The staff of the Test Division of the CTSF at Fort Hood, was tasked by CIO/G-6 to conduct AIC test events during the period 3 July – 30 September 2008 on 48 Software Block 2 (SWB2) systems. As testing progressed and test events drew to a close, the Test Division's Methodology and Documentation (MAD) branch became aware it would be necessary to assist test officers in creation of test reports (then called Executive Summaries or ExSums), and further, to process and publish those reports prior to Nov 1, 2008. It became apparent that a system had to be developed to help expedite the writing and processing of an expected surge of ExSums, to track them through the development/revision process, and to ensure timely publication of the documents through the CTSF's Army Knowledge Online (AKO) knowledge center.

The MAD branch leadership, in conjunction with the branch's computer scientist and data management specialist, responded to the challenge of dealing with the expected crush of documentation requirements by creating what came to be known as the MAD Resource Management (MRM) portal on the Test Division's internal computer network, known at the CTSF as the "Back Office".

The MRM portal contained tools available to Test Officers that gave them guidance and assistance in creating ExSums from the raw data they gathered during their respective test events. The writing tools were designed to provide writing parameters to the test officers, rather than templates, to allow the material expressed in the ExSums to more accurately reflect the testers' observations.

The portal also contained an easily-accessed acronym data base for Test Officer reference. It also featured an M-mail system allowing working documents to be e-mailed directly between Test Officers and ORSAs for review, comment and revision.

The MRM system was also designed to track working documents so, at any time, the branch chief and ORSAs knew who was working on a document and exactly where it was on the road to publication. After ORSA and Test Officer review, documents were M-mailed to the technical writer for spelling and grammar revision and final formatting. Again, the built-in tracking system gave instant access to any document's progress.

Development and use of the MRM portal, and the tools contained in it, shortened the time it took Test Officers to write their system ExSums, allowed for quick and easy interchange of information between Test Officers and ORSAs, which resulted in a more finished product being received by the technical writer. This cut down on the time it had once taken to get documents ready for staffing and signature. The development of the portal also allowed time for leadership review of nearly-finalized documents. Leadership was then able to provide "finishing guidance" that led to the evolution of a document that was more than "just acceptable" to action officers at the CIO/G-6 level.

# C4ISR NEWS

# Center managing left-behind gear

**By Robert Goodwin and Richard Pribyl**
*Professional Briefers*

It's 7:30 a.m. The rising sun begins to warm the clean, crisp air. Off on the horizon, clouds gather. Rain is forecast for the day, but that will not matter for David Allen, CECOM contractor, and Joseph Gallagher, Tobyhanna Army Depot (TYAD), as they start their day in support of their two CECOM Life Cycle Management Command (LCMC) support missions at Fort Hood, Texas.

Allen, the leader of the 407th region CECOM LBE team, huddles with his team of Command, Control, Communications, Computers, Intelligence, Surveillance, Reconnaissance (C4ISR) specialists and coordinates with representatives from the local logistics support element.

The LBE team is working with an Avenger battery on how they will inspect, identify components of end items, workload into a source of repair (SOR) and turn in C4ISR items to the CECOM LBE team and the Army Materiel Command's care.

Not far away, Gallagher, a long standing veteran of Reset and LBE Communications Security (COMSEC) Controlled Cryptographic Items (CCI) missions, arrives at a secure site designated by the 4th Battalion, 407th Army Field Support Brigade and supervises the unpacking of several tri-wall corrugated boxes, preparing his depot team to receive COMSEC CCI from the LBE pool to pack, wrap and ship to Tobyhanna Army Depot for technical inspection and repair.

Army units, during deployment planning and execution, prepare Mission Essential Equipment Lists of equipment they will need to accomplish their mission. What is not needed is "left behind" by the unit until it returns.

Previously, these LBE would have remained a unit's responsibility – even as they were deployed — but early in Operation Enduring Freedom and Operation Iraqi Freedom (OEF and OIF), the Department of the Army realized a grow-



U.S. Army Photo

*Keith Hall and David James from the CECOM East Region Field Team work left-behind equipment re-issue at Fort Stewart, Ga. on Nov. 18.*

ing problem with the accountability, storage, and maintenance of LBE.

In March of 2005, and subsequently in September of 2007, the Department of the Army published new guidance on the receipt, storage, maintenance and return of LBE, charging Army Materiel Command (AMC) and its primary agent, Army Sustainment Command (ASC), with the LBE mission.

Earlier this year, the Deputy Commanding General for AMC, LTG William Mortensen, shifted a large responsibility for LBE to the AMC life cycle management commands (LCMCs). "LCMCs will immediately assume maintenance management of CONUS LBE production execution and assure re-issue to supported units on time and at a minimum of 10/20 standard."

The 10/20 standard refers to assuring compliance of a piece of equipment to the maintenance standards cited in the 10 (operator) and 20 (unit level) series technical manuals for the equipment. It is generally more stringent than fully mission capable.

Thus, the CECOM LCMC LBE program began. It was implemented to address two key objectives: 1. release units deployed in the Global War on Terrorism from equipment responsibility for materiel not needed for their wartime mission and left at home; 2. ensure that the LBE is maintained and available to support the Army Force Generation (ARFORGEN) process.

**LBE Operations**

The CECOM LBE section analyzed the mission, developed, analyzed, screened and compared courses of action, and proposed a unique concept for approval of CECOM's leadership.

In this concept, CECOM developed three field teams which report to the LBE Branch located at Fort Monmouth. With a contract award at the end of June, by August, CECOM LBE assets were working to meet the new LCMC mission.

Each LBE team is comprised of 14 contractor personnel led by an Army civilian employee. The teams' home stations are co-located with the Army Field Support Brigades (AFSB) - the 406th at Fort Bragg, N.C., 407th at Fort Hood, Texas, and 404th at Fort Lewis, Wash., with area responsibility.

Although assigned to the LBE Branch, the teams are under the operational control of the CECOM Senior Command Representative (SCR) in each of the brigades. Each team takes mission direction and

work priorities from the SCR in coordination with the brigade.

The Fort Monmouth portion of the branch includes a budget manager, a database manager, and regional logistics managers linked to each of the three brigade regions.

Additionally, there is a COMSEC CCI team responsible, in coordination with Communications Security Logistics Agency and Tobyhanna Army Depot, for management of the COMSEC LBE program, due to the unique nature of the commodity.

Throughout the LBE process, the combined CECOM team provides LCMC oversight for the C4ISR LBE equipment, and will assist at any point to assure the needed LBE maintenance velocity.

The LBE Branch utilizes automated tools and maintains databases to track the progress of all CECOM equipment, including the LCMC's interactive logistics database, called the LBE VISTOOL, to report on the progress of their respective LBE programs at the bi-weekly AMC Commander's Reset Video Teleconference.

The CECOM LCMC presence in the field is through three regional support contractor teams: the 407th Army Field Support Battalion – West region; 406th AFSB – East and

404th AFSB Pacific, respectively.

Allen is no stranger to this mission, having dealt with LBE in his past assignments. All fifteen members of his team are former military. Several were doing reset installations at Fort Hood, and others were doing similar missions in Iraq.

The field team's actions start when the unit's initial equipment density list is provided to them through Army Forces Command and their AFSB. The team can then plan for resources needed to support the LBE induction and pull needed information from the technical manuals (TMs) and other sources.

The actual "boots-on-the-ground" support commences at induction, which is the initial phase of the LBE program when ownership of the left behind equipment is assumed by AMC and "inducted" into the LBE program — when they identify the CECOM managed items, assist the ASC property accountability contractor (PA-KTR) with the inspection and inventory, and verify the completeness of the systems.

Allen's team was on the ground before they were fully staffed. Their LBE mission commenced Aug. 25 at Fort Riley, Kan. supporting the 1st Infantry Division, "Big Red One." This five-person team supported the 4th Brigade, 1st Infantry Division, for 29 days.

The east region team's first mission was undertaken in late August with the 270th Signal Brigade and it centered on sorting out MSE equipment in seventeen shelters, according to Davis.

In contrast, the Pacific team deployed its first three members to Fort Wainwright, Alaska, in early September to support LBE needs for the 1st Brigade Combat Team (Stryker), 25th Infantry Division. Johnson advised that the mission covered 41 unit identifier codes and took three weeks.

The schedule for the induction had been previously coordinated with the unit, 407th AFSB, and the PA-KTR for that region. Allen indicated that these contractors generally have a supply accountability background, and break into three-to-five person teams to work the mission. A three person team per battalion is typical.

Allen related that his CECOM cadre typically breaks into two-or-three-person teams that work together with the PA-KTR teams to execute the induction mission. There are basically two aspects to the CECOM LBE mission, according to Allen.

The first aspect, about 60 percent of the work, concerns the visual inspection, gauging serviceability and maintenance status and executing the Equipment and Maintenance Inspection Worksheet, used to document serviceability and required maintenance for the piece of equipment based on the team's inspection.

Faults are noted and obsolete legacy equipment is highlighted. Occasionally equipment that obviously should not be turned over as LBE is encountered, for which the unit is very appreciative.

The second aspect is focused on a determination that the equipment, as identified on property book, is correctly identified and is complete (all components are present). Identifying component shortages for C4ISR takes real expertise. Fortunately, the CECOM team members also have individual strengths (e.g. switches, SINCGARS, generators, etc.), which permits the contractor to tailor team composition for individual missions.

The teams work closely with the AFSB and logistics support elements to identify and assign the SOR that will undertake the technical inspection and complete any needed maintenance for the equipment. The preference is to use a field level SOR located at the unit's home station installation.

Often this is not possible because of capacity and capability issues at the installation SORs, or because of a variety of other factors.

CECOM is the decision maker for SOR for all CECOM items. The CECOM team participates through-

out the workload and repair process and assures that maintenance velocity is maintained so that Forces Command priorities and repair cycle mandates are met.

There is also a process to identify when LBE assets should be fed


U.S. Army Photo

*CECOM Pacific Region Field Team members, Daniel Goolsby, Michael Oden, Steven Scheel and Jay Tourette, visually inspect items turned in by units as excess to the left-behind equipment program at Fort Lewis, Wash. on Nov. 17.*

to existing depot level repair programs. The CECOM weapon system teams identify these situations to the LBE Branch, but implementation requires coordination with U.S. Army Forces Command and ASC, and final approval by the headquarters of the department of the Army.

Allen said that the biggest initial challenge for the team was to demonstrate that his team was not just another contractor added to the mix, but rather a team that could provide real value to the Army's LBE process.

The team leaders' continual challenge is to assure that the Warfighter identifies and submits the unit's planned LBE on the density list to ASC when needed in the LBE process cycle. Often, this is not accomplished and then project planning needs to proceed based on a worst case scenario.

This plays havoc with the planning process and can result in less than optimal resource planning, both in terms of personnel and the financial side. Davis said this, "can be a real killer."

The team composition for the mission is tailored based on the density list, and further, the team is able to pull TM's and do the needed research on the unit's specific LBE prior to the mission based on the list.

The teams also assist and facilitate with the identification of obsolete equipment or other equipment requiring disposal action.

As a final action, the teams perform a quality assurance action before the LBE is re-issued to the returning units 30 to 60 days before the unit redeploys to assure that the equipment is complete and is at 10/20 standards.

The most value-added aspect that his team provided was, "the assistance we brought to ASC's Property Book Contractor for his region, in terms of component identification and identification of shortages," said Davis.

Johnson added that the customer feedback has been very positive. "They are happy because they learn from us."

## ABOUT THE AUTHORS

Robert Goodwin is currently assigned to the Left Behind Equipment Branch, within the Logistics and Engineering Directorate, in the CECOM LCMC Logistics and Readiness Center.

He is a retired LTC with 23 years of commissioned experience in logistics, theater level material and maintenance management, and is a veteran of OIF and OEF.

Richard Pribyl, a contractor in the same branch, is a retired DA civilian and forty-year Fort Monmouth employee.

He has a Bachelor of Science in Electrical Engineering from Duke University, is a member of the Acquisition Corps, and is Level III certified in Acquisition Logistics.

# ARMY IMPERATIVE: TRANSFORM

**Continue to *transform* our Army into a superior *21st century* fighting force.**

◆ Grow our forces; upgrade and modernize them so they continue to be an agile, globally-responsive Army composed of modular units;

◆ Continue making the organizational and institutional changes needed to field an expeditionary Army in this era of persistent conflict;

◆ Adapt our Reserve Component units so they will be used on a cyclical basis rather than exclusively for national emergencies; and,

◆ Develop and promote Leaders with the insight and adaptability to prevail in a wide variety of combat and non-combat missions.



U.S. Army Photo

# Software team meets threats head on

**By Kim Himstreet**
*Software Correspondent*

An office that when it was established in 1992 was responsible for reprogramming force protection systems to deal with a single radar signal detecting set common to 1,500 Army aircraft has grown in capacity to support multiple data sets for multiple force protection systems protecting over 40,000 aircraft and ground platforms.

The Army Reprogramming Analysis Team (ARAT) based at the CECOM Life Cycle Management Command's (LCMC) Software Engineering Center (SEC) develops and distributes the rapid reprogramming capability for the theater specific software used by force protection systems to counter multi-spectral threats, a mission that has become increasingly complex as enemy weapons and sensors now proliferate and evolve at the fastest pace seen in decades.

"Force protection systems play a vital role in enhancing the survivability and situational awareness of Warfighters by defending against enemy threats," said Michael Crapanzano, Division Chief, ARAT-Product Office, Avionics, Countermeasures & Sensors Division, US Army CECOM LCMC SEC. The threats include radar tracking signals, incoming missiles and radio-controlled improvised explosive devices. These electronic warfare systems are integrated into military aircraft and vehicles used by the Army, Navy, Marine Corps and Coalition partners and include such systems as target sensors, jammers and aircraft survivability equipment.

"In today's combat environment, the timeline from an enemy's decision to target and engage U.S. forces until impact or detonation is measured in seconds. In those seconds, a Warfighter's ability to accurately identify the threat and take the appropriate action to locate, evade or destroy it is the difference between life and death," said Crapanzano. To succeed in providing effective force protection requires continually updating the software to meet new and emerging threats, better known as Mission Data Sets (MDS).

The ARAT Program Office's software engineering capability is responsible for the development, reprogramming, testing and validation of new and updated Mission Data Sets for several radar detection systems. Properly characterizing and replicating the signal wave forms of highly complex modern radars requires the ability to move and manage a daunting volume of data. Since many threats have similar characteristics, each MDS must be thoroughly tested to ensure supported systems can discriminate between incoming signals with high fidelity.

Fulfilling the rapid software reprogramming requirements of today's continually evolving combat environment is challenging at best, said Crapanzano. In 2006, the base timeline to create an aviation system MDS was several months, requiring laborious entry of thousands of data elements into simulation files by hand. This data, reflecting electronic warfare signatures, became the basis of a series of simulations, which then had to be manually assembled into an MDS-specific test scenario.

This required many long hours in front of a computer and often meant a significant lag time between the identification of a threat and the upgrades necessary to counter that threat. To speed the MDS delivery process, the ARAT teams analyzed their timelines and identified key schedule drivers in their processes, enabling them to develop and implement new tools and software automation.

By fusing threat data with information provided by the new MDS generators, culling non-pertinent intelligence feeds, and tailoring theater-specific information, ARAT compressed the 2008 base timeline for MDS and theater-specific simulation generation to weeks, rather than several months, according to Crapanzano. These new tools, coupled with greater automation, have also significantly reduced labor requirements and produced a higher volume of development.

U.S. Army Photo

*ARAT engineer Mike Deluccia (left), demonstrates Mission Loader Verifier capability to a Warfighter from a National Guard aviation unit.*

"The ARAT has been a great help with SOAR's (Special Operations Aviation Regiment) unconventional request for information for both software and threat analysis," said 160th CWO (4) Jerald Kassel, II. "They are truly a force multiplier regarding the United States' effort directed at the Global War on Terrorism within special operations forces' aviation."

The 160th SOAR provides aviation support to special operations forces around the globe and depends on ARAT's ability to provide timely, accurate MDS updates.

To safely execute their challenging and diverse mission requirements, the 160th Tactical Operations Officers and Electronic Warfare Officers need to pull and push updated threat and tactical information at a very fast and accurate rate.

ARAT is continuing its time reduction efforts, integrating more robust automation capabilities and introducing other organic software support for multi-spectral and core system software development beyond Mission Data Sets.

The ARAT Program Office has directed its software engineering and threat analysis teams to reduce the hours required to develop a base MDS by 90 percent. This will be accomplished through automated MDS generation and loading of electronic warfare data, making MDS analysis far less labor intensive. "Net-centric dissemina-

tion and reprogramming will further reduce the time it takes to achieve Warfighter protection, making real-time Army force protection reprogramming capability possible in 2009," said Crapanzano.

**Secure Portals Optimize Distribution**

Although the MDS is essential to Force Protection Systems, it is useless if it does not reach the Warfighter in a timely manner. During Operation Desert Storm, units received hard copies of new and updated Mission Data Sets several weeks after the completion of development and testing. Shipping hard copies also increased the possibility of loss or damage during transit, causing further delays.

To optimize distribution, ARAT developed and maintains the Secure Internet Protocol Router Network-based ARAT Warfighter Survivability Software Support Portal (AWSSSP). "This secure portal provides secure access to MDS files and threat updates, and allows Warfighters on the front lines to reach back to subject matter experts as needed," said Crapanzano.

ARAT also developed, maintains and administers the U.S. Army Aviation Warfighting Center portal providing tactics, techniques, procedures and other classified mission essential information, software and resources to aviators. Now, when a new or updated MDS becomes available, all units are notified electronically via reprogram-

ming impact messages and they can immediately download the updates through the AWSSSP.

"The ARAT portal has proven to be a viable and invaluable method of releasing software. The support personnel who maintain it are the reason for that success," said COL Kennedy Jenkins, program director of Aircraft Survivability Equipment.

Jenkins relies on the ARAT program's technical capability and infrastructure to provide a common access point and secure distribution of the software required to operate aircraft equipped with the Common Missile Warning System.

The ARAT Support Cell at Fort Rucker, Ala., launched a secure portal mirror site in December 2007, ensuring continuity of operations by providing data redundancy and additional real-time support capability. This gives Warfighters a single interface to access classified Force Protection System support using a net-centric approach.

The ARAT's improved, adaptable processes and support infrastructure embody the principles of Net-centric, collaborative Army Transformation, resulting in real-time support capability down to the unit level. By keeping pace with technological advances and evolving Warfighter requirements, the ARAT has dramatically improved its capability to provide rapid support for Force Protection System software requirements, according to Crapanzano.

TRANSFORM

# C4ISR transformation ...

Graphic Courtesy Skidmore Owings and Merrill LLP (SOM)

**By Henry Kearney**
*CECOM PAO*

A symbolic milestone is being reached at Aberdeen Proving Ground (APG), Md., this month with the completion of the exterior of the first two buildings being constructed as part of Phase I of the sprawling Army Team C4ISR (command, control, communications, computers, intelligence, surveillance and reconnaissance) campus there.

The emerging campus, which will eventually contain 2.4 million square feet of office space for well over 7,000 military and civilian personnel and support contractors, represents a new beginning for the Army and a once-in-a-generation investment in a Center of Excellence that will be unequalled anywhere in the world.

Part of the Army's transformation involves DoD Base Realignment and Closure (BRAC) initiatives including the relocation of the Army Team C4ISR mission -- comprising the Army CECOM Life Cycle Management Command (LCMC), the Army Communications-Electronics Research, Development and Engi-

neering Center (CERDEC) and Army Program Executive Offices for Command, Control and Communications-Tactical and for Intelligence, Electronic Warfare and Sensors -- from Fort Monmouth, N.J., to APG by Sept. 2011.

Army officials broke ground on the new $477 million complex at APG, marking the start of construction of "Phase One" of the campus, last March.

Under the construction contract, Tomkins-Turner Grunley/Kinsley, a Joint Venture, will build five administration and laboratory buildings, a secure shop and warehouse, an auditorium and a training facility of 1.5 million square feet.

### A Historic Chapter

"As we begin a new chapter in our proud history, we do so with great confidence in continuing to execute our mission, along with a renewed sense of commitment to exceptional service to our nation," MG Dennis L. Via, commanding general of the Army CECOM LCMC, said in his remarks at the groundbreaking ceremony. "We also remain committed to taking care of our people who are front and center

and at the very heart of everything we do."

Every Army Team C4ISR organization currently located at Fort Monmouth will occupy some space in the initial phase of construction, said Mike Vetter, CECOM LCMC director for logistics and engineering.

"Phase Two" of the construction is slated to begin this year with three new buildings and renovations of existing buildings.

The two phases will create the "C4ISR Center of Excellence" and a work environment similar to a college campus that will be significantly

different from the one with which the organizations have become familiar at Fort Monmouth, according to Vetter. Mission personnel there are currently spread across 40 to 50 buildings. At APG the same people will occupy a much smaller 16-building complex.

"The entire Phase One complex fits on a plot of land within a quarter mile radius making it easy to meet with people," Vetter said.

"Parking will be closer to workplaces than it is [at Fort Monmouth]. Buildings will be dedicated more along business and functional areas; and people who work in similar mis

Graphic Courtesy Skidmore Owings and Merrill LLP (SOM)

# Taking Formation

U.S. Army Photo

*As construction continues at Aberdeen Proving Ground, Md. (photos above and below) the resemblance to the architect's conceptual renderings (left) of the Army Team C4ISR campus increases.*

sion areas will probably work in the same building."

**Phased Relocations**

The movement of equipment and personnel to APG is being planned and conducted in phased stages to ensure stability of operations during the relocation without interruption.

As of January 2009, more than 270 Army Team C4ISR personnel had already relocated to APG and nearly 400 additional personnel have volunteered to relocate this summer. Plans call for well over 1,000 out of a total of approximately 7,000 Army Team C4ISR military, civilian and contractor positions to relocate by the early summer of next year (through early moves, hiring at APG and military assignment).

All of the remaining positions

> "I was very pleased to see the efforts that have been going on here for the move, and to mitigate the impacts on people because that's very important to all of us."
> Army Chief of Staff,
> GEN George W. Casey, Jr.

are expected to move later next year and in 2011 as construction of the Phase One and Phase Two campuses is complete.

Stating that "effective with the groundbreaking ceremony at Aberdeen Proving Ground, we have transitioned from the planning to the execution phase of our BRAC relocation", Via announced a major reorganization of the CECOM LCMC

headquarters last April to better align the command and Army Team C4ISR organizations to execute the actual relocation.

The reorganization established three new positions - Deputy Commander for Operations, Plans and BRAC; Deputy Commander (Forward) at APG, and Director, Commander's Initiatives Group.

In speaking of those planned initiatives, Via emphasized that "we are leveraging BRAC as a catalyst for change…[and to] reconstitute the command and determine what we need to support the future force and capabilities in 2015 and beyond."

He explained that the command is continuing to meet with senior leaders located at APG to ensure all workforce and mission needs are met. In addition to office and laboratory space there, planning is also in process for a food court, development of a shore park area, a new child care facility, and tempo-

U.S. Army Photo

rary housing to help meet the needs of Army Team C4ISR personnel relocating there.

Via noted that the availability of bus trips to the APG area, informational kiosks, relocation fairs, a BRAC special section in the Monmouth Message newspaper and other strategic communications tools are being employed to provide the members of the command with the information they need to determine their future and facilitate their transition.

**Job Opportunities for Soldiers**

Additionally, command implementation of innovative recruitment methods and training, strategic communications and knowledge capture will help ensure a successful phased relocation of the workforce and will help meet the challenge of filling a large number of vacancies, he said.

It is anticipated that as many as 1,250 positions will be filled between now and 2011, primarily at APG, and an additional 2,200 vacancies will require recruitment at APG after the full transfer of the mission occurs in 2011.

Current and future vacancies exist in many civilian career fields including Engineering and Science; Logistics/Supply/Maintenance; Administrative/Business; Contracting; and Information Technology. For transitioning soldiers with skills in these areas, job opportunities will be plentiful. In addition to full performance positions, Army Team C4ISR will be recruiting management trainees as well.

As part of its strategy to meet hiring challenges, Army Team C4ISR has extended its outreach efforts to wounded Soldiers, including coordination with the Army's Warrior Care and Transition Office which oversees the various Warrior Transition Units. Similar programs also are being utilized such as the Army Materiel Command's Always a Soldier Program designed to assist wounded Soldiers in finding jobs.

"Working together, we'll meet the challenges of relocating our complex mission; and we'll continue to excel together in supporting our nation's Warfighters and the Global War on Terror," Via said.

# Unmanned assets, Soldiers teaming to deal with enemy scheming

**By Brandon Pollachek**
*IEWS Correspondent*

As unmanned aerial systems (UAS) have become increasingly more important to military operations, so too has the role that Program Executive Office, Intelligence Electronic Warfare and Sensors (PEO IEW&S) plays in supporting the U.S. military's eyes in the sky.

PEO IEW&S develops fields and sustains numerous systems that play a vital role in UAS operations. The PEO, headquartered at Fort Monmouth, N.J., is responsible for systems which are involved in the full cycle of UAS missions.

Through its various program managers it touches multiple facets of the UAS world, from payloads to systems that make sensor information and imagery available for analysts who can, in-turn, package information for the commanders that are responsible for cueing an aircraft for additional missions.

The PEO's involvement in UASs includes both airborne and ground-based systems. The ground-based systems currently fielded to the Warfighter include the Distributed Common Ground System-Army (DCGS-A), and Base Expeditionary Targeting and Surveillance Systems-Combined (BETSS-C). The Tactical SIGINT Payload (TSP), Electro-Optic/ Infrared/ Laser Des-

ignator (EO/IR/LD) and the Synthetic Aperture Radar/Ground Moving Target Indicator (SAR/GMTI) represent aerial-based systems the PEO is producing to complement the bevy of options available for UASs.

Providing the Warfighter with a view of the battle space and an ability to neutralize a threat with UASs is a fundamental portion of the systems provided by the Army's Product Manager (PdM) Robotics and Unmanned Sensors (RUS). SAR/GMTI and EO/IR/LD are payloads found on current UASs with plans to be incorporated on to the future Fire scout, which PdM RUS manages.

Currently housed on the Warrior Alpha is the Lynx I, a SAR/GMTI payload supporting current operations to satisfy a quick reaction response for our Warfighters. StarLite, the SAR/GMTI program of record production system, will be integrated and fielded in all 10 Army divisions with the Sky Warrior Block 1 and the Fire Scout Class IV Future Combat System (FCS). These payloads offer two important capabilities to our warfighting decision makers.

In the GMTI mode "the radar senses and tracks moving targets on the ground," said LTC Terrence Howard, PdM Robotics and Unmanned Sensors. As an example, he explained, "If you have a series of vehicles on the ground, (GMTI) tracks the movement of those targets. Although you cannot positively identify those moving targets, this capability allows for situational awareness of movement that might be of importance to operations. These systems are especially important on poor visibility days when camera technology does not work as well."

Assisting GMTI in providing an identification of a target is the responsibility of the SAR portion of the payload. "Think of SAR as a single map developed from smaller strip pictures," explained Howard. "SAR takes a picture of a strip of land and the next strip of land and the next strip of land, tying those strips together to provide a 2D dimensional map of the area of interest. If there is a tank or a truck or something in those strips the analysis can detect that."

The payload has the flexibility to switch back and forth during a mission between the two capabilities depending on the information needed. The combination of StarLite, Lynx I and another RUS payload, EO/IR/LD, allows UASs to be an all-in-one tool for conducting intelligence, surveillance and reconnaissance missions.

The Common Sensor Payload (CSP) is the next version of EO/IR/LD and the primary payload for all Army UAVs. "Typically you are going to cue an EO/IR because you can't fire on anything without positive identification," said Howard. The EO portion provides a picture of the area being surveyed by a UAS and the LD gives the UAV the ability to point at a target for the direction of weapons.

"Every (UAS) mission is an EO/IR/LD because not only does CSP provide them with the contents for the reconnaissance piece it also provides a targeting element, which is reconnaissance surveillance target acquisition (RSTA)," said Howard.

The Common Sensor Payload offers commanders and analysts with a broad spectrum of coverage

TRANSFORM

**Common Sensor Payload
EO/IR/LD**

**Sky Warrior (ERMP)**

**STARLite**

with options that include color and black and white TV, image intensified TV and mid-wave forward looking infrared (FLIR) sensors.

The CSP and StarLite have both been accepted for the Sky Warrior and will replace the LYNX II and EO/IR/LD.

Another capability in great demand from the field is for SIGINT. The TSP payload, which is slated to reside on the Sky Warrior UAS, will offer an amplified amount of SIGINT coverage to the field. Complementing the existing SIGINT assets currently available, this program of record (POR), which used to be a part of PdM Prophet currently is managed by PM Aerial Common Sensors (PM ACS).

"We were on the MH 60 Blackhawk helicopter and then we went to the Hunter/Fire Scout and now we have a requirement for the ERMP UAS as that is becoming the new UAS of choice for the Army," said Mike Schwartz, Assistant Product Manager for TSP, regarding the history of the program.

"TSP will provide the Warfighter with enhanced situational awareness, emitter mapping, target identification and electronic intelligence preparation of the battlefield," stated Schwartz. "Our big thing is emitter mapping but TSP provides so much more. It is more than just a map, it's all the identification behind the signals it is collecting.

TSP locates emitters on the battlefield and provides that data to a map so that a Warfighter or commander can see where these emitters are on the battlefield.

"Putting SIGINT on UAS's is going to be a big step forward for the Army in terms of adding to the

collection and data information that decision makers can get right now," added Schwartz.

Another capability that PEO IEW&S is providing to Warfighters is the BETSS-C system. Managed by PM Night Vision/ Reconnaissance Surveillance and Target Acquisition (NV/RSTA), BETSS-C is currently being fielded to units in the field.

The goal of BETSS-C is to rapidly provide the Warfighter with a flexible, mobile, adjustable, scalable, and expeditionary surveillance system or integrated System of Systems (SoS) for standoff surveillance and persistent ground-targeting capability and force-protection operations.

BETSS-C serves as a sensor data management architecture which provides information to the intelligence and operations communities. With respect to DCGS-A and UASs, BETSS-C will provide another path for full motion video/imagery ingestion from UASs into the DCGS-A, with further FMV/imagery availability for other intelligence platforms.

Analyzing and making use of the various types of information that BETSS-C, SAR/GMTI, EO/IR and TSP currently or in the future will provide falls into the world of DCGS-A.

"All roads lead to DCGS," said LTC Daniel Cunningham, PdM ISR/RSTA Operations DCGS-A. DCGS-A is the Army's ground portion of the Joint Intelligence Enterprise unifying the collection, processing, analysis extraction, query and visualization capabilities for tactical environments. This unification is accomplished by fusing the technology of nine existing intelligence systems into one net-centric enterprise capability.

DCGS-A users receive UAS data from other DCGS systems in the enterprise via metadata. It can receive UAS data using tactical communications.

Version 4 of the system will

have access to Full Motion Video and other direct sensor feeds.

Images or signals relayed from a UAS are available to DCGS-A analysts in near real time. "Essentially as fast as the sensor can send the data to the ground receiver," said Cunningham.

As new payloads are incorporated on future UASs like TSP and EO/IR, DCGS-A should not be required to add new sensor processing capabilities unless the UAS is
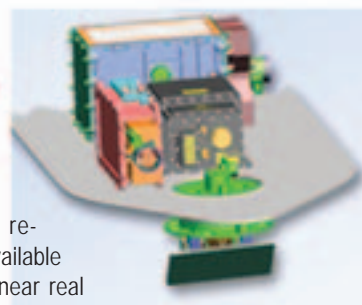
carrying a new and unique sensor.

PEO IEW&S will continue to provide proactive support to meet the challenges and demands from the UAS community as America's eyes in the sky continue to evolve.

Courtesy Photo

*The Common Sensor Payload (CSP) and STARLite will provide the Sky Warrior with a broad spectrum of coverage allowing the system to be an all-in-one tool for conducting intelligence, surveillance and reconnaissance missions.*

Graphic provided by PEO IEW&S

*The Distributed Common Ground Station-Army receives UAS data via metadata which is made available to analysts and commanders in near real-time.*

# Panel eyes filling Soldier tech gaps

*The gap between Soldier's needs and engineer's solution has a name: Opportunity*

**By Amy Walker**
*C3T Correspondent*

ABERDEEN PROVING GROUND, Md. — With science and technology funding constrained during this time of war it helps to efficiently identify and fill gaps between Warfighter needs and technology solutions.

With that in mind, the Program Executive Office for Command, Control and Communications-Tactical (PEO C3T) Technology Transition (T2) Strategy reached a milestone for a new method of focusing collaboration between the acquisition and the science and technology (S&T) communities at the Technology Gaps Panel Session (TGPS) here at the Army Research Laboratory, Nov. 24.

As in the past, this year's panel focused on pinpointing and prioritizing technology gaps. PEO C3T defines T2 as the incorporation and utilization of S&T deliverables into an acquisition program to fill technology gaps.

"I'm proud of these PMs, (project managers)," said MG Nick Justice, PEO C3T. "Their technology insertions radically changed the face of our world."

The TGPS is a forum for the senior acquisition and S&T leaders to provide valuable guidance into the T2 processes, migration strategies and technology gaps. The results of the TGPS will be used to formulate the PEO Top-20 prioritization of technology gaps, which will then be published in the Technology Transition Matrix. The T2 Matrix is a repository tool to provide the management and overview of the prioritized technology gaps, along with the correlating S&T projects and the current transition status.



Photo by Richard Mattox

*During the session, MG Nick Justice (center) engaged John Kubricky, Director. Defense Research and Engineering Advanced Systems and Concepts (DDR&E AS&C) (left), while Michael Krieger, Army Deputy Chief Information Officer/G6 (right) and other dignitaries listened.*

"How can we engineer change in a POR (programs of record)?" Justice asked. "I look to the S&T community to help with this and to help drive the cost down by providing value engineering insertions to programs of record."

Technology gaps are not new requirements or "holes" in PORs, but targets of opportunity where S&T resources can be applied for several main purposes, including risk reduction and alternative approaches that affect size, weight and power (SWaP), cost, schedule and performance. Technology gaps are also used to enhance current capabilities towards program migration strategies, to improve enterprise effectiveness and efficiency of C3T weapons systems and to achieve high payoff objective requirements.

Those S&T deliverables are divided into two categories: (1) software and hardware components, and (2) intellectual property, which include algorithms, technical analysis reports, architectural design documents and specifications.

"This is not meant to be a capstone event," Justice told the panel members. "This is meant to be an engagement to continue a broader discussion on how, through better engineering capabilities in the Army, we can better leverage all of the (S&T) efforts we have, and offer you the opportunity to grab hold of a bunch of PMs and product managers that are willing to roll up their

sleeves and help you guys figure out how to get that effort into programs of record and make them have legs."

The knowledge and expertise of the panel members enables them to highlight any technology gaps that might have been missed in the initial gap identification process. Utilizing a panel that is made up of senior leaders from the Office of the Secretary of Defense and Army acquisition and S&T communities allows PEO C3T to get away from prioritizing their gaps in a stovepiped manner, said Grace (Qi Ping) Xiang, Chief Technical Officer, System Engineering & Integration (SE&I) Futures Office.

"The significance of the session is first to get the panel members to provide feedback in terms of our migration strategy and technology gaps as well as their vote of the Top-20 priorities," said Xiang. "Second, we ask for feedback on our T2 Framework, and finally, we look for their buy-ins. Does the T2 Framework work? Is it good? What are the areas of improvements?"

The basic T2 Framework consists of four major processes. The first step in the process, which is where TGPS occurs, focuses on the identification and prioritization of technology gaps. After the TGPS, three groups are consulted for the PEO's Top-20 priorities. The TGPS panel members hold 60 percent of the final weight, the

## *Spectra People Power Focus: Grace Xiang*

# Managing tech relationships with Grace

**By Amy Walker**
*C3TCorrespondent*

With the support of many, Grace (Qi Ping) Xiang is quietly improving the face of Technology Transition (T2), one technology gap at a time.

Matrixed from the Communications-Electronics Research Development and Engineering Center (CERDEC) for the past three years, though she became core in May, Xiang has the technical background to support her work designing and modifying the T2 framework and its processes.

"I do not believe that one process fits every organization," said Xiang, Chief Technical Officer for the System Engineering & Integration (SE&I) Futures Office of the Army's Program Executive Office for Command, Control and Communications-Tactical (PEO C3T). "The key goals are the same, but the ways you use and implement it can be different. What we are trying to do is use ourselves as a pilot."

Pinpointing and prioritizing opportunities in technology requires a focused collaboration between the PEO C3T acquisition, and the CERDEC Science and Technology (S&T) communities. Thus, to discover what is useful to the customer and to determine gaps, Xiang and her team conduct their own marketing and feedback requisitions on technology frameworks. The Technology Gaps Panel Session (TGPS), one of the critical milestones for T2 collaboration, not only identifies and prioritizes technology opportunities, but it also offers invaluable input on ways to improve the framework. Xiang incorporates useful feedback into the framework to improve its capability and impact.

"Our role in the Future's Office is to make sure the T2 framework is useful for our customer, the PMs, because they're the ones actually conducting the transition," Xiang said. "So, the

Photo by David Brackman

*Grace Xiang, Chief Technical Officer for the System Engineering & Integration (SE&I) Futures Office, PEO C3T*

framework has to be user friendly."

The basic T2 framework consists of four major processes. Depending on different S&T project types, the cycles and timeframes may vary somewhat. These distinctive steps, however, are always synonymous. The first, focuses on the identification and prioritization of the technology gaps. Next, potential S&T projects are identified and aligned with each. Execution, oversight and revalidation of T2 are the core priorities of the third.

Completion of the transition, finalizes the T2 framework. This is a documentation step that evaluates the criteria as laid out in the technology transition agreements and validates that the deliverables were accepted and have been utilized properly.

"We're not selling the T2 Matrix; we are selling the T2 Framework," Xiang said. "The T2 Matrix is just a tool to enable the framework to work.

So, if there is another tool that is user friendly and serves the same purpose, we can leverage that too."

Xiang manages the implementation of the T2 Matrix, a repository tool located on the Army Team C4ISR Knowledge Center that lists by priority PEO C3T's top 20 technology gaps, the correlating S&T projects that address them and the status of the transition.

"I take on a matchmaker role," Xiang said. "In industry they call it *the relationship manager.*"

Xiang and her team inform the S&T community once the gaps are identified and prioritized. This is where the matchmaking begins, as S&T projects or proposals are aligned with the PEO's technology gaps. Xiang is also responsible for managing the T2 gaps, paying special attention to those that cross organizations.

Xiang and her team have set their sites far beyond the PEO C3T. PEO Intelligence, Electronic Warfare and Sensors (IEW&S) has already played a role in the process for three years, and the Intelligence and Information Warfare Directorate (I2WD) continues to adopt facets of the T2 framework. Since PEO IEW&S needs to operate on a secure level, Xiang has partaken in efforts to release a Secure Internet Protocol Router (SIPR) version of the T2 Matrix within the next month or two.

According to Xiang, the Army Armament Research Development & Engineering Center (ARDEC) and Michigan's Tank-Automotive Command Life Cycle Management Command (TACOM LCMC) maintain an interest in the T2 Framework.

"Right now, our number one gap is putting Soldiers at risk," Xiang said. "Our PM's are thoroughly engaged in fixing the problem. However, our role is to make sure that in the system's future releases, the C3T requirements that will address the gap are already embedded within it."

PMs hold 30 percent, and then a selected designated SE&I staff holds the remaining 10 percent. The consolidated Top-20 priority list is then forwarded to PMs for concurrence, and then to MG Justice for final approval.

The second process focuses on the assessments of potential S&T projects or proposals and alignment with appropriate technology gaps. Depending on different S&T project types, cycles and timeframes may vary somewhat, but the steps are always the same. This process ends when a Technology Transition Agreement (TTA)

is approved by Justice.

The third process is a repeatable process that focuses on execution, oversight and revalidation. Toward the end of an S&T project, the transition resource should be budgeted in the PM's Program Objective Memorandum. If not, a strategy to obtain interim transition funding should be in-placed.

Completion of the transition finalizes the T2 framework. This is a documentation step that evaluates the criteria as laid out in the TTA and validates that the deliverables were accepted and

have been utilized properly.

Several panel members noted that, on occasion, too many S&T dollars are used when existing systems might have been put into place to fill those gaps. Whenever possible, the Army should integrate already existing technologies to create new capabilities for the Warfighter.

"S&T should include system integration," Justice said. "It should bring existing systems together to create new capability, like a science experiment, add this and add that and make something new."

TRANSFORM



Photo by Richard Mattox

*A convoy of future on-the-move platforms for the Warfighter Information Network-Tactical (WIN-T) Increment Two including the two point of presence vehicles on the left during the WIN-T Increment Two Engineering Field Test at Fort Huachuca, Ariz. in December.*

# Generals talk SATCOM's past, future

**By Josh Davidson**
*C3T Correspondent*

FORT LAUDERDALE, Fla. — So, you're wondering - just how far has the United States military expanded its reach into cyberspace? This simple comparison might shed some light for you.

Upon her recent entrance into the Air Force Academy, Air Force GEN Kevin Chilton's daughter received a computer. Her father, the first astronaut to obtain a fourth-star in the military and commander of U.S. Strategic Command, received a post slide rule as a freshman in the academy in 1972.

"Cyberspace wasn't a word and computer networks weren't invented when I joined the Air Force," said Chilton, as he shared stories of the tool's capability to solve simple mathematics equations at a press conference during LandWarNet 2008. Held here in August, he also responded to questions about the Army's Warfighter Information Network-Tactical (WIN-T).

Satellite communications capabilities such as WIN-T Increment One, which emerged during Operation Iraqi Freedom, provides units at the battalion-level and above a full range of communications capabilities shortly after a pause in maneuver. The capabilities include the ability to connect voice data from various Army digitized sys-

tems and video from sensors via satellites across the globe using Internet technology.

The systems connected on this communications pipe include Army Battle Command Systems 6.4, a suite of digital systems that Warfighters use to execute battle command functions such as locate friendly units using Global Positioning System (GPS) technology, organize logistics plans, analyze intelligence data and terrain, manage the airspace, and develop other missions.

Chilton used arguably primitive tools, such as the $250 Hewlett-Packard calculator he obtained as a sophomore to upgrade that slide rule, to illustrate the military's proclivity for technological advancement.

"So, that's where I came from, and now I look today at the information we move; the calculating power of computers today is just unbelievable," Chilton said. "It is unbelievable what we can push forward and the decisions tools that are at hand for a commander, the bandwidth connectivity. It just amazes me."

Bandwidth will expand in WIN-T's three remaining increments to support data as more continues to fill the Army's network. WIN-T Increments Two and Three will bring the initial and full on-the-move capability to the entire Army, where units will not need to pause during maneuvers to

obtain the full range of communications services.

The further-specialized Increment Four will leverage the secure anti-jam, low probability of detection satellite communications capabilities which will arrive with the Air Force managed program, the Transformation Satellite Communications (TSAT).

The Army has been proceeding apace with a series of tests of WIN-T in 2008 that will continue into 2009 and beyond. These tests are part of a "build-a-little, test-a-little" development strategy, which uses networks of increasing scale to identify developmental issues early on and address them before they magnify.

The objective of the WIN-T Increment 1a Initial Operation Test and Evaluation, held at Fort Lewis, Wash. in October, was to demonstrate operational effectiveness, operational suitability and survivability in support of a full rate production decision, said Increment One Test Engineer, Herbert Cort.

WIN-T Increment 2 already underwent two successful Engineering Field Tests (EFTs). The first, held in October 2007 at Fort Dix and at the Navy Air Engineering Station, Lakehurst, N.J., consisted of 15 Highband Network Radios and eight Network Centric Waveform modems. It was performed in a highly mobile environment over cross-country terrain, said WIN-T Increment Two

and Three Lead Test Engineer, Kenneth Hutchinson.

The 30 node EFT completed at Fort Huachuca, Ariz. in November further contributed to building a body of evidence necessary to move from the research and development phase and into to the production and fielding phase.

Operational benefits rather than risks will emerge among the joint forces, as bandwidth is moved to the edge of the battle space. "And you provide to the Soldier, Airmen, Marine and Sailor forward what they need to accomplish their mission," he said.

While generally not against the notion of pushing information down to the battle space's edge, Chilton stressed that discipline must be exercised when hooking applications to those data streams.

To illustrate this point, Chilton harked back to the military's early experiences in the information technology realm.

"Part of one of the problems, when you look back, not too many years ago, was when we first said, 'OK, we're going to get our arms around cyberspace: well - where is it, what is it, what's on it?'" he said. "And, we found all kinds of applications, the pedigree of them, the source code for them, et cetera, not well understood. So, getting an understanding and having configuration control and an understanding of what applications allow you to ride on this network is really important, but certainly not beyond our capability. We just need to be disciplined about it."

In a joint force, it is "absolutely essential" for Soldiers to stay aware of the capabilities the other services are adding to the network, Chilton said. "We are a joint force; we fight together jointly," he said.

This proves evident today, in the close integration between air and land forces conducting operations in Iraq and Afghanistan, he said.

"They are already sharing common operating pictures between cockpits and Soldiers on the ground and passing information back using whiteboard-type technology that's really making them more powerfully combat effective," Chilton said. "And so, if you don't know what your buddy is using and that technology then you are ignorant perhaps of the increased capability you can bring to the fight and vice versa."

Understanding the capabilities of another Warfighter in any domain is key for leveraging the tools necessary to complete one's mission, he said.

Today, efforts such as LandWarNet are providing Soldiers with a single identity, so they can access the network from any location. It also yields significant cost savings for the tax payer.

The Global Network Enterprise Construct will leverage Network Service Centers and provide a way to centrally manage limited network resources, such as spectrum and bandwidth, with a decentralized capability, said MG Susan Lawrence, Commanding General, NETCOM.

This means determining the capabilities a Soldier or Airman needs to fight and delivering it through an enterprise network. The use of a singular network, rather than multiple ones, allows for significant cost savings.

"We have to be responsible stewards of our defense dollars as we move forward," said Lawrence, citing the current economic situation in the United States.

Efforts such of these are aligned with the initiative of Chief of Staff of the Army, GEN George W. Casey Jr., to increase the amount of Army enterprises, Lawrence said.

Casey has asked the Army's leaders to examine "how can we do things more efficiently and effectively and get returns on our investments; deliver a better capability that is value-based," Lawrence said.

"So, he is forcing all of the leaders in the Army to think about how we deliver services different than we did yesterday," she said.

The incremental delivery of WIN-T allows the Army to field technologies that already exist in the WIN-T program to satisfy current Warfighter needs, while planning for the future, said LTG Jeffrey A. Sorenson, the Army's CIO/G6.

Separating the delivery of WIN-T into timeframe-based increments, contingent on the availability of technology, is an approach which is similar to that of Future Combat Systems, said BG Jeffrey W. Foley, the Army's Chief of Signal and Commanding General, U.S. Army Signal Center, Fort Gordon, Ga. It lets the Army deliver capability to the Warfighter when it is technologically available and reliable, he said.

"…Get capability into the force as soon as possible, and celebrate the success of that, work on it and build upon it," he said. "It's a very powerful acquisition process."

The Army will stay the course with WIN-T as its main communications pipe for Army Team C4ISR systems as it evolves into the future. "WIN-T is our flagship program for the Army C4 world," Foley said. "There are others out there; many of them, and it's important to keep their work redundant, to keep robustness and the bandwidth capability coming. But it is our flagship program."

Sorenson, Foley and Lawrence were interviewed during a press conference at the 2008 Association of the United States Army Annual



Photo by Richard Mattox

*CWO (5) Leslie Cornwall, left and MAJ Marcus Odum from the Training and Doctrine Command (TRADOC) Capabilities Manager Networks and Services examine Warfighter Information Network-Tactical (WIN-T) equipment during the WIN-T Increment Two Engineering Field Test at Fort Huachcuca, Ariz. in December.*

Meeting and Exposition held during October in Washington, D.C.

Regional combatant commanders and the joint services would benefit from a Joint Task Force-developed list of metrics of which reporting requirements they should request from their network warriors, Chilton said. These lower echelon Soldiers would report this information to their commanders, to allow them to understand the readiness of their network for a mission or possible degradations, he said.

"So, I think there can be an educational part of that, as well, that flows; not only top down, but bottom up," he said.

During his experience as a wing commander, Chilton carefully examined maintenance metrics to be proactively aware of the health of his fleet in order to conduct combat operations.

Project Manager, WIN-T is assigned to the Army's Program Executive Office for Command, Control and Communications-Tactical (PEO C3T). ABCS 6.4 is assigned to Project Manager, Battle Command, of the PEO C3T.

**TRANSFORM**

# First-of-a-kind counter-mortar test facility saving time, money, lives

**By Jaqueline Boucher**
*Tobyhanna Correspondent*

Warfighters stake their lives on the accuracy of Tobyhanna's groundbreaking technology every time they set up Lightweight Counter Mortar Radar (LCMR) systems in the field.

Personnel here test new and repaired LCMR AN/TPQ-48 systems using a first-of-its-kind mechanical live-fire test simulator (M-LFTS) that replicates war zone scenarios. LCMR systems are used to sense enemy fire and warn Soldiers so they can suppress or destroy the threat.

The M-LFTS facility is the only enclosed indoor simulator for counter fire radar and LCMR in the world, according to Scott Allen, one of the systems engineers, who worked on the project alongside employees from the depot, Fort Monmouth, N.J.; SRCTec and Technology Services Corp (TSC).

"This has been a team success—the depot Program Executive Office/Product Manager acquisition community, the Army test community, and industry," said COL Ron Alberto, depot commander. "This simulation provides a more reliable system to the user at lower cost and much quicker than the previous live-fire process."

The $6 million radar test facility started full acceptance testing in December. As an alternative test location, radars that need testing will now come to Tobyhanna.

"We're all very proud of this system," said Allen, who works for Product Manager (PM) Radars office at Fort Monmouth. He also mentioned that this move puts Tobyhanna one step closer to becoming the LCMR Organic Sustainment Facility in 2009. Once designated, Tobyhanna will become a one-stop shop for LCMR repair and testing, he added.

"Tobyhanna was the first and only choice for housing the M-LFTS due to its reputation for excellence as well as its close proximity to both SRC [LCMR prime contractor] located in Syracuse, N.Y., and the PM Radars office," Allen said, adding that the contractor is using this system as a development tool for future LCMR versions.

There are three versions of the radar in use or in development today—V1, V2 and V3. Hundreds of them are in various stages of upgrade or manufacture.

"The Army is fully aware of the M-LFTS's current and future potential to test, verify, calibrate and deliver quality radars to the Soldier whether new or after repairs," Allen said.

The new radar test capability will improve readiness and save the Army material and money. According to James Pochas, Tobyhanna's LCMR project lead, the Army wanted to eliminate the need to ship radars to the Yuma Proving Grounds in Arizona for acceptance testing.

"It's more cost effective and takes less time to ship to the depot," said Scott Larson, lead engineer on the project. "And, as a sustainment facility we'll be able to repair and return radars here rather than Arizona."

Larson is assigned to the Intelligence, Surveillance and Reconnaissance Engineering Branch, Production Engineering Directorate. Preliminary estimates indicate that testing an LCMR here will cost about $5,000 per radar while outdoor tests at Yuma cost about $30,000 per day.

The simulator is housed in an anechoic chamber and has the capability to electronically generate weapon simulations now being performed by actual mortar fire on the outdoor range at Yuma.

Technicians here test the radar by using a complex system of electronics to simulate scenarios available on an outdoor range. In Yuma, the radar is tested by 11 problems of varying distances, shot directions and mortar sizes.

To create a realistic environment during testing, Larson explained that the radars are set up using the same cables and power supply found in the field. Furthermore, simulation is connected to the radar through the ruggedized computers Soldiers use in the field to operate the system.

Dave Stutzman and Mark Dolph know from first-hand experience how valuable the LCMR is to the Soldier in the field. They deployed to Iraq and Afghanistan, respectively, last year to support Tobyhanna forward repair activities. Both men are electronics mechanics in the Firefinder Division, Intelligence, Surveillance and Reconnaissance Directorate.

"The Soldiers seemed to like the radar," Dolph said. "They're portable, easy to move around and they save lives."

The entire system is capable of being disassembled into man-portable cases which will fit into a single up-armored vehicle or equivalent Humvee.

The system can be assembled and made operational in 20 minutes or less by a two-person team, mounted on or off the vehicle.

"Everything is working well so far," said Stutzman. "It's exciting to see the advancement in technology at work at Tobyhanna."
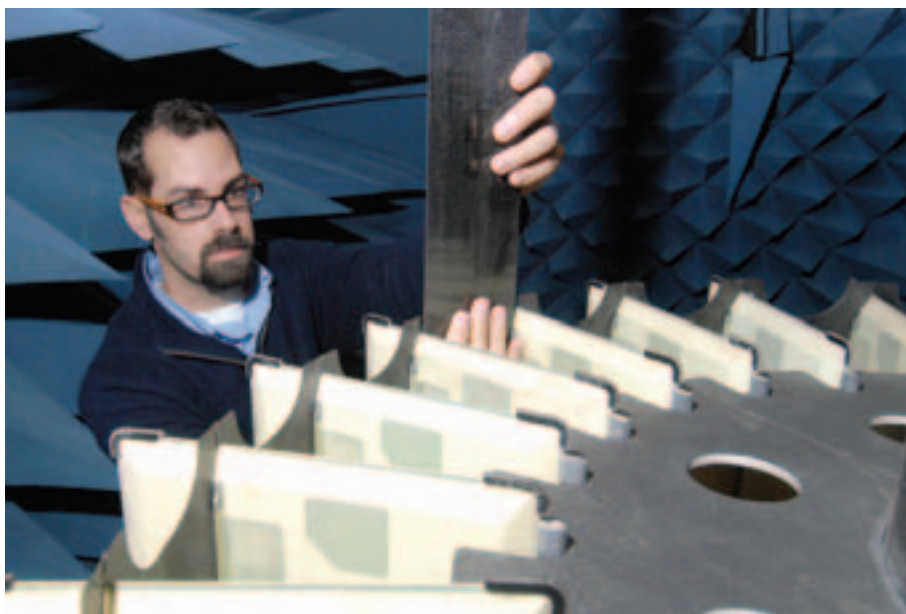


Photo by Steve Grzezdzinski

*Scott Larson installs antenna ground planes on a Lightweight Counter Mortar Radar prior to testing in the Tobyhanna Army Depot's new $6 million mechanical live-fire test simulator that replicates war zone scenarios. Larson is an electronics engineer in the depot's Production Engineering Directorate.*

# New power solutions on horizon for Army

*Focus of power in the future is on generators functioning in a distributed environment, to maintain continuity during combat operations*

**By Paul Wein**
*C3T Correspondent*

*A Soldier with the 40th Special Troops Battalion stands guard near the generators during a command post exercise in preparation for an upcoming warfighter simulation exercise in San Diego, Calif., May 5, 2007.*

FORT BELVOIR, Va. — A new way of delivering power to the Armed Forces is on the horizon to meet the need for power — the lifeblood of technological operations — that coincides with growing levels of technology and lethality across the Army and its sister services.

The Advanced Medium Mobile Power Sources (AMMPS) Program, now being developed by Project Manager for Mobile Electric Power, is designed to replace the existing fleet of Tactical Quiet Generators currently in operation.

Production for this third generation power source is scheduled to begin in late 2010. "AMMPS will begin to be fielded in 2011 providing even further operational benefits for command posts," said MEP's Deputy Project Manager, Paul Richard.

On average, AMMPS generators will reduce maintenance hours by 50 percent, increase reliability by 34 percent, and reduce fuel consumption by 16 percent over comparable Tactical Quiet Generators. "PM MEP is continually working to develop smaller, lighter and more fuel-efficient power sources," said Richard.

Command posts operating in the field are a capability platform upon which units exercise battle command, and the current technological state of those systems relies heavily on electric power.

For many years, generator allocations were based on diverse, separated power requirements within these command posts. This resulted in relatively large numbers of smaller-sized generators, many of which were not backed up or only partially so.

To address this condition, PM MEP worked closely with the Project Manager, Command Posts and the TRADOC Capability Manager, Battle Command to develop centralized power distribution architecture to more efficiently supply power to command posts.

The approach, deemed the Command Post Central Power Solution, uses fewer, larger Tactical Quiet Generator power units and power plants. Power is distributed via the Power Distribution Illumination System, Electrical equipment. The result is a continuous power source for elements of a command post, even if a generator set is down for maintenance or repair.

The benefits associated with this approach insure continuous operation of mission-critical equipment, reduces maintenance by 71,000 man hours per year, fuel consumption by 275,000 gallons per year and carbon dioxide emissions by 2,400 tons per year for a typical Army division. This will improve even further when AMMPS replace Tactical Quiet Generators on a one-for-one basis in command posts beginning in 2011, according to MEP's Project Manager, Michael Padden.

"Our primary mission is to equip and support Warfighters deployed throughout the world, though, we are also committed to transforming battlefield capabilities by developing advanced technology to meet the future needs of combatant commanders," said Padden.

PM MEP is currently working several initiatives which have the potential to revolutionize how power is generated and distributed on the battlefield, including: the Hybrid Intelligent Power program which is a Secretary of Defense-directed initiative to identify methods to enhance energy security through the use of intelligent power management and the integration of renewable energy technologies.

The Net Zero Plus Joint Capabilities Technology Demonstration program will demonstrate a forward operating base functioning on reduced energy consumption; as well as other energy related initiatives with academia, industry, and other government agencies.

"These are truly dynamic times for battlefield power integration," said Padden. "The importance of energy security has never been higher, and the work we are doing today on command posts is scalable throughout the battlefield and has the potential to significantly improve the Army's energy posture."

Project Manager Mobile Electric Power has been powering battlefield capabilities for over 40 years. As part of its mission to provide tactical electric power to all four services, PM MEP is an integral part of the Army's Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) team and provides the power necessary to maintain mission critical operations.

Although PM MEP equips the entire Department of Defense with reliable and technologically advanced power generation and distribution equipment to support worldwide operational requirements, its alignment as part of Army Team C4ISR is admittedly its most important mission, since without tactical electric power, the digitized battlefield would cease to exist.

**C4ISR NEWS**

# Special projects office shifts focus from disaster-react to preparation

**By Amy Walker**
*C3T Correspondent*

A Team C4ISR organization based in Fort Dix, N.J., has been in a state of transition, changing the direction the organization is taking from one of national disaster response to providing highly mobile communications to areas that do not support a communications infrastructure.

"We've morphed from taking care of the National Guard kinds of disasters that we originally started in, into providing communications assets for situations where normal communications are not possible," said John Talamo, deputy director of the Program Executive Office Command, Control, Communications-Tactical's Northeast Regional Response Center (NRRC).

Having alreadydeveloped a relay solution that allowed them to offer communications to unimproved areas such as Afghanistan and inside the newest Department of Defense (DoD) regional military headquarters of Africa Command has led to the development of the NRRC's Global Rapid Response Information Package (GRRIP).

Weighing in at less than 30 pounds, the GRRIP kit is carried in a hand-held case and, despite its relatively small size, it enables the Warfighter and first responders to communicate anywhere in the world. It provides NIPR/SIPR voice and data capability without electricity or an existing infrastructure and can be set up in less than 10 minutes.

Talamo sees potential for the GRRIP kit to be used by a variety of operations, including U.S. embassies, which due to security issues do not utilize local infrastructures. A large segment of the DoD and federal communications user community is quickly evolving toward the use of these broadband mobile communications devices because of the great amount of operational flexibility they offer. Up until now, commanders and deployed operational teams have had severe bandwidth and connectivity restrictions when not located at an operating base.

The GRRIP was designed and actually procured for the intelligence and counter intelligence elements that tend to operate in small numbers, said Talamo. From an Army standpoint, many smaller intelligence and special operations teams are in the field, sometimes with three men or less, and they need to be provided with the communications capability to conduct their missions. The idea of moving a full communications infrastructure to support such small operations does not make sense, and this is where the NRRC stepped



Photo by Timothy L. Rider

*Satellite communications specialist, retired SSG Joe Lewis provides instruction to satellite operator SPC Ryan McQuaid on operating the Satellite Communications Transportable Terminal at the Louis Armstrong New Orleans International Airport, Sept. 21.*

in to provide its services.

All of the current systems coming out of the NRRC did not exist prior to Hurricane Katrina, but were in fact developed because of it. As soon as first responders arrived, it became apparent that despite their technologically advanced systems, basic communication was almost non-existent. Cell towers had been destroyed and half of the landline switches were underwater, so the use of commercial and cellular phones was minimal.

Eventually, small enclaves of communications did start to pop up, and those in the field soon realized that they needed to be able to communicate across the civil/military divide. They used portable cellular networks called Cellular systems On Wheels (COWS) that allowed for cellular service within a 20 kilometer radius. If a person was within that radius they could communicate, however, the COWS were spread far apart and travel was extremely difficult, so it was a challenge just to get within the desired circle.

In the end the fix was very simple, Talamo said. The NRRC hooked up one of the commercial COWS to their Ku-Band satellite communi-

cation. This way, a responder could call one of the COWs on his cell phone, the satellite transferred them to the NRRC, and from there, they could talk to anyone in the world.

"This has become the NRRC's standard solution today," he said.

The Ku-Band is a portion of the electromagnetic spectrum in the microwave range of frequencies. It offers the user more flexibility, a smaller dish size, and freedom for terrestrial operations. It also enables smaller antennas and is less vulnerable to rain fade than other frequencies.

During the period that followed Hurricane Katrina, many emergency networks were created and built out from their original constructs. This is when the NRRC transitioned into providing highly portable communications to areas where the infrastructure was destroyed or never existed.

"We're now capable of interfacing with the existing military structure, capable of interfacing with the existing civilian infrastructure, but we're also capable of crossing from military to civilian, which is our uniqueness," Talamo said.

# Logistics modernization expanding

**By Michael O'Donnell**
*Professional Briefer*

As part of DoD's move towards the utilization of Enterprise Resource Planning (ERP) systems across all services, the Logistics Modernization Program (LMP) was deployed at CECOM in July 2003, replacing the 30-year-old legacy system, Commodity Command Standard System (CCSS), as well as the Standard Depot System (SDS) at Tobyhanna Army Depot. As LMP end users within the Logistics and Readiness Center (LRC) began to utilize LMP, they discovered data and systemic issues which prevented the full use of the Supply Chain Planning (SCP) modules within LMP. Data quality is the key component for effective planning across an organization's supply chain.

The two main SCP modules within LMP, Demand Planning (DP) and Material Requirements Planning (MRP) were negatively impacted as the result of erroneous data residing in the system. DP and MRP are used to forecast and plan Army managed spare parts. The LRC executes approximately $1.5 billion in Army Working Capital Fund spare parts repairs and buys annually. As a result of the data and systemic issues that were discovered, the item management community was required to compute and forecast spare parts requirements via offline Excel spreadsheets.

The utilization of the offline computation tools were necessary in order to plan for CECOM spare parts. However, these tools do not have the capability to feed the LMP module that formulates our budgetary projections – known as the budget stratification process. Over time, the data and systemic issues initially discovered after LMP deployment were corrected which pro-
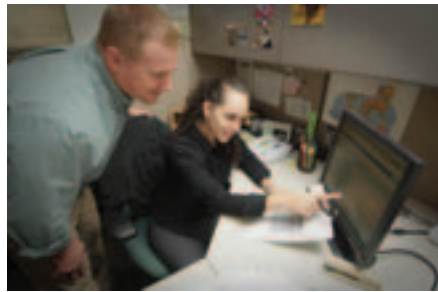
U.S. Army Photo

*Dan Brown, demand planner, provides desk-side support to Amy Moricz, item manager in the Command and Control/Avionics branch, Dec. 17.*

vided the opportunity to begin utilizing the LMP DP and MRP modules to their fullest extent.

In October 2007, LRC Director David G. Sharman directed that the LRC Weapon System Directorates be fully trained on the SCP concepts by January 2009. A plan was developed to "re-deploy" the SCP modules of LMP to the LRC workforce and all activities relating to this came to be known as the MRP Expansion Plan. Personnel within the Logistics Systems and Support (LS&S) Division of the Logistics and Engineering Operations (LEO) Directorate of the LRC developed a roll out plan that included setting the sequence of Directorate and Division training, development of course material, scheduling of classes and various workshops and designation of instructors.

Within the LRC there are three Weapon System Directorates (Communications, Command Control/Avionics and Intelligence Electronic Warfare Systems) and the Communications Security Logistics Agency (CSLA). Personnel from these Directorates and CSLA were targeted as

the training audience for the MRP Expansion Plan.

There were five courses developed for the plan and attendance for a given course was mandatory depending on an individual's job series. The most critical player in the SCP process is the secondary item manager and these individuals are required to attend all of the five courses. The MRP Expansion Plan was officially launched in January 2008 with the roll out of the first weapon system division. Each month thereafter a new division was rolled out, reaching a total of 12. The roll out was to conclude with scheduled training at CSLA in January 2009.

Currently, 198 training sessions have been completed which totals 2,939 personnel being trained over 2,165 hours of instruction. Additionally, the first "MRP Certification Scorecard" assessment has been completed for the Communications Directorate where categories (data, classroom attendance, item manager SCP proficiency) are reviewed to determine "MRP Readiness" and to deem certification for a Weapon System Division and Directorate.

The MRP Expansion Plan is an effort involving much coordination and participation from a significant number of LRC personnel. As it moves forward, it will allow for more accurate spare parts planning and more timely and proficient support of the Warfighter in the field.

## ABOUT THE AUTHOR

Mike O'Donnell is a member of the CECOM LCMC LRC's Supply Chain Planning Branch.  He supported LMP Go-Live and has continued supporting since Go-Live in the SCP area. Mike is also the Project Lead for the CECOM LRC Task Force Support for AMCOM LMP Deployment.

## *"NRRC," From Previous Page*

The NRRC is moving away from the "disaster business," said Talamo. It was key in the development of the Joint Incident Site Communications Capability (JISCC), which allowed the National Guard to respond by themselves. The JISCC provides interoperability between agencies and services in a matter of seconds. It includes everything a first responder needs to communicate during disaster relief missions. The radios, mobile Very Small Aperture Terminal (VSAT) satellite communications equipment, Voice-over-Internet Protocol (VOIP) phones, computer stations, video teleconference equipment, facsimile machines, scanners, printers and generators are all packaged together. The VSAT can link to a satellite within five minutes after it is powered up.

If the National Guard takes JISCC out to a disaster area, they can provide whatever services

are required to the local residents, such as using cell phones, FM, UHF, VHF radio servers. However, now that other organizations possess this capability, they need a place to transfer their communications into in order to get the services they need. No longer does the NRRC have to physically deploy to the disaster,

Currently, there is no readily available mobile Defense Information Systems Network (DISN) access and associated managed services being provided by a single government organization. The NRRC provides this capability, and it is drawing great interest not only from Army users, but Joint users as well.

Going forward Talamo sees the NRRC's communication services being used by the Air Force, Border Patrol, the Department of Homeland Security, and the Coast Guard. He could not

stress enough the importance of the underlying services that the NRRC provides. The GRRIP kits, the Mobile Command and Control Vehicles (MC2Vs), or any other product that they produce, are only as good as that underlying service that allows them to work.

The MC2V is a non tactical command and control platform that demonstrates Joint Tactical Interoperability, utilizing NIPR, SIPR and Coalition Networks.  It uses SEGOVIA as the primary Ku service provider.

"Put the MC2V out in the middle of the swamps, and by itself it's kind of worthless, but from that vehicle, they contact the NRRC, and because *we* can communicate with *them*, they can communicate with the rest of the world," Talamo said. "If they can't talk to us, it's just a hunk of steel."

**C4ISR NEWS**

# Soldiers happy to lose 'sneakernet'

**By Delle C. Lambert**
*USAISEC Correspondent*

FORT HUACHUCA, Ariz. – Soldiers will rely increasingly on a new version of wireless local area network prototyped last summer and rely less on a predecessor, the sometimes treacherous and untimely method for transmitting and receiving vital logistics information known colloquially as "sneakernet."

The network, called Combat Service Support (CSS) Automated Information Systems Interface (CAISI) operates in enclaves supported by a CSS Very Small Aperture Terminal (VSAT), which provides a satellite data uplink into the Non-secure Internet Protocol Router Network (NIPRNet).

To solicit Soldier feedback, PM DWTS fielded the initial prototype of the improved CAISI 2.0 at Fort Drum, N.Y. with Soldiers of the 10th Mountain Division during July and August.

"The origins of the term sneakernet and who first coined it are unclear, but it's a way of ironically saying 'there is no network connection. You must transfer the data using the sneakers on your feet,'" said CECOM LCMC Command Historian, Wendy Rejan.

Soldiers have expressed appreciation because with CAISI/CSS VSAT, they no longer have to go "outside the wire" to transfer data, and this can reduce casualties, according to Brad Amon, who is responsible for the project's engineering efforts.

Contractor support is only required for rear satellite link management and forward component repair activities. CAISI/CSS VSAT is designed for ease of use and to be operated by Soldiers, according to Amon.

Each system is small enough such that a fixed station is not required. It takes about 20 minutes to set up a CAISI/CSS VSAT, and it is optimized to take human error out of the picture. "The CAISI Bridge Module (CBM) weighs only 50 pounds and is a little larger than a standard suitcase," said Rodney Hom, United States Army Information Systems Engineering Command (USAISEC) Technology Integration Center (TIC) test engineer.

The CAISI/CSS VSAT allows Soldiers to digitally transmit sensitive unclassified critical supply and maintenance transactions such as food, clothing, sanitary supplies, and equipment required for troop sustainment. It also allows them to electronically transmit requisitions and receive near-real time status reports, improving unit readiness.

Parts for all Army vehicles such as tanks, trucks, and humvees can be ordered any time day or night. Critical orders for medical supplies as well as casualty care status and Defense Information Systems Agency (DISA) biometrics are transmitted.

Wherever Soldiers are deployed with their CAISI/CSS VSAT, they can connect through the minimum of satellite relay links to a teleport. The reason is because the new CSS VSAT can access the four NIPRNet teleports located strategically around the world, according to Amon.

The Army G4 employs an evolutionary development approach to sustain the Army requirements with commercial off-the-shelf (COTS) components integrated into effective deployable modules. Project Manager Defense Wide Transmission Systems (PM DWTS) manages the development, fielding, training, and full lifecycle support of both CSS communications systems.

The USAISEC provides PM DWTS with full lifecycle systems engineering support for CAISI. Systems engineering is continuously researching the impacts and alternatives required to improve systems, while addressing new issues such as technology evolution, potential threats and new Department of Defense requirements.

The first versions of CAISI wireless and VSAT were fielded in 2002. The Army G4 directed PM DWTS to support ongoing missions throughout the world with over 9,000 CAISI modules and over 1,000 VSATs to date. Some of the technology of the commercial-off-the-shelf (COTS) components in the CAISI Version 1 have become obsolete and are no longer available. New COTS components were identified and the CAISI 2.0 was developed as a planned technology refresh with deployment starting this fiscal year.

While CAISI 1.0 CBM was limited to a single 2.4 Gigahertz (GHz) radio, CAISI 2.0 provides two radio cards and operates in both 2.4 and 5 GHz channels providing a significant flexibility for a variety of radio frequency(RF) circumstances and various host nation regulatory restrictions. CAISI 2.0 also uses Institute for Electrical and Electronics Engineers (IEEE) 802.11a and 802.11b/g as optional protocols to provide wireless bridging and access point services.

One of the most significant improvements in terms of ease of use for version 2.0 is the auto configuration feature. This feature of the CAISI 2.0 allows a single radio to be set up as a root master and the configuration of all of the subordinate radios can be automatically distributed.

All radio configuration features can be performed using software embedded in the radio module that is accessed via a browser. The CAISI 2.0 topology view feature allows the radio links to be effectively monitored and managed.

Each CAISI 2.0 CBM is fielded with a 30′ mast. The CAISI 2.0 includes a 3′, RF cable for much less signal line loss than the 25′ and 35′ cables in CAISI 1.0, which gives the Soldier better connectivity at longer distances.

The USAISEC CAISI team completed the initial acceptance testing for CAISI 2.0 in the summer; it included outdoor long distance 32, 16, and 8 mile point-to-point performance tests using high gain directional antennas. Omni antennas were used to demonstrate performance of the point to multipoint tests at 1 and 2 mile distances and the mesh networking in a field using 7 radios in a 2-mile diameter area at the east range here.

In most cases, the user is only one to two miles away; however, the directional antenna can reach out up to 35 miles across a valley or wherever there is a visual line of sight, according to Lead System Engineer for CAISI, Brad Amon.

CAISI allows CSS automation devices to network within logistic support areas and to electronically exchange information via tactical or commercial communications, according to Amon, who is responsible for the project's engineering efforts.

Richard Sinclair and Michael Chasse, USAISEC system engineers, and Rodney Hom USAISEC test engineer, each have played key roles in the development of the requirements for the CAISI 2.0.

They also lead the design and development of the test bed equipment and the testing methods used by USAISEC to validate required performance. Other engineers from USAISEC who have been involved in the project from the TIC and Enterprise Systems Engineering Directorate (ESED) include: John Kimbell, Joshua Parrish, Tanya Renteria, Chim Yee, Rodney Harp, Julia Le, Jimmy Chinen, Mike Uerkvitz, Larry Hart, and Katie Lemons.

CAISI also supports intransient visibility and total asset visibility when it is used in conjunction with hand-held bar code scanners. Thanks to CAISI repeater modules mounted on poles throughout ports, stevedores can transport data cargo even through the canyons of steel created by many shipping containers.

# Logisticians shift focus to outcomes

**By Amy Walker**
*Logistics Correspondent*

The Army hopes that Performance Based Logistics (PBL), which began as a concept, will eventually transition into traditional standard practice. The Logistics and Readiness Center (LRC) PBL office is working diligently to facilitate this transition.

Gary Salomon, Champion of the LRC PBL Office, was interviewed recently at his Fort Monmouth, N.J. office about PBL, an integrated acquisition and logistics process for buying weapon system capability. PBL is a support strategy that places primary emphasis on optimizing weapon system support to meet the needs of the Warfighter.

Performance Based Logistics (PBL) differs from traditional sustainment strategies due to a shift from buying goods or services, to buying an *outcome* in terms of performance, a performance that is linked to a metric.

"That is really the essence of PBL," said Salomon. "I don't need to buy a hundred parts. What I need to do, is buy 95 percent operational availability to the Warfighter. If that means buying 200 parts, or it means only doing some reliability improvement and buying 50 parts, which is always better, that's what I'll do."

The PBL Champion effort started in January of this year and was initiated as a result of meetings with Program Executive Offices (PEOs) and other customers at Fort Monmouth, where a desire was expressed for more assistance in implementing PBL.

## Primary Elements

PBL consists of three primary elements. The first is buying an outcome that is defined by metrics. This involves documentation of Warfighter performance requirements as measurable metrics in Performance Based Agreements (PBAs).

The second element is using a Product Support Integrator (PSI) to designate a single point of accountability for performance.

The third element is the development of support metrics and accompanying incentives to ensure that the performance objectives are met. The structure must be designed using a Business Case Analysis (BCA), which consists of qualitative and quantitative tasks and analysis. This BCA reveals the optimal structure for sustaining a system according to those metrics.

## Ideal Candidates

PBL is essentially a problem solving technique. Ideal candidates for the strategy are those with reliability problems, obsolescence



problems, source of supply problems, and diminishing manufacturing sources. A PBL strategy and approach is then designed to address those issues.

"So for example, you can take a system where there is a shortage of supply or an increased price due to technical obsolescence," Salomon said. "By incentivizing a contractor under a PBL contract, building on the right metrics that you use, you can have a contractor better able to address those problems than by merely just issuing a contract for supplying parts."

He said that the contractors can actually be incentivized to solve problems through the structure of the contract and the manner in which their performance is mea-

sured. PBL gives them a better opportunity to improve a product, rather than just being a source of supply.

## PBL Customers

Every PBL arrangement begins with the required sustainment performance needed by the Warfighter, who is the primary customer. The next step is to figure out how to implement something that meets those requirements using contracts, agreements, and other types of methods used within PBL.

The total lifecycle system manager, the assigned Project Manager (PM), is another PBL customer, and they have their own unique set of metrics to meet their needs.

"So you start with a Warfighter metric, and you go down through a PM. The PM then provides metrics on the service provider, which may be us, may be Tobyhanna (Army Depot, Pa.), or may be a contractor," Salomon said. "In which case, those metrics get put into a contract and you measure it that way. So there's a customer chain. And you have to be responsive to those metrics in that chain of customers."

## Advantages of using PBL

PBL saves money for the taxpayer and the Warfighter since it is a process in which the Army designs, through a set of analytical steps, the best value and sustainment alternatives at the least lifecycle cost. Through the BCA, PBL actually defines the cost, and the user always has that baseline to go back to if the objectives or the metrics are not being met. The user can go back and see where the process did not work properly and measure what the cost should have been, then make the necessary adjustments.

"You have to have some basis to compare your performance that you didn't have before," Salomon said. "So, that allows you to optimize the sustainment methods you are using, hopefully for the lowest cost, certainly for the best value and best results for the Warfighter."

The PBL structure is predisposed to the implementation of improvements, maintaining good configuration management, making sure that technology is continuously upgraded and software changes are implemented properly and in a timely fashion. "Those all have to be elements of the PBL construct so that nothing in there should interfere with any of the efforts that the PM would naturally perform," Salomon said.

## PBL LRC Partners

The LRC PBL Office works most frequently with PEOs Command, Control and Communications-Tactical (C3T) and Intelligence, Electronic Warfare and Sensors (IEW&S). They are also beginning to work with PEO Enterprise Information Systems (EIS). Tobyhanna Army Depot works closely with the LRC and is "a big player" with PBL in terms of the capabilities that they bring to the table, such as depot level maintenance, fabrication, forward repair activity, overhaul and RESET, Salomon noted.

"We're always looking to increase that reach out capability and bring people into the fold," he said.

## Future Success

The PBL Champion effort is a facilitator of the PBL process, a shepherd, but the real success of PBL will be measured when it enables the entire LRC and the Command to practice PBL themselves. One of the PBL team's key strategic goals is to provide the knowledge and the ability to perform the PBL elements and to execute a PBL program down to the working level. The actual implementation of it needs to be led by the people on the weapon system teams who work with the PMs and the Soldiers on a day to day basis.

"Quite frankly, you would expect to see some resistance or some stress when you're trying to implement something like this," Salomon said. "But in fact, what's been nice to see is that uniformly the folks that we're working with in the PMs and the weapon system teams are very eager and enthusiastic about implementation."

**C4ISR NEWS**
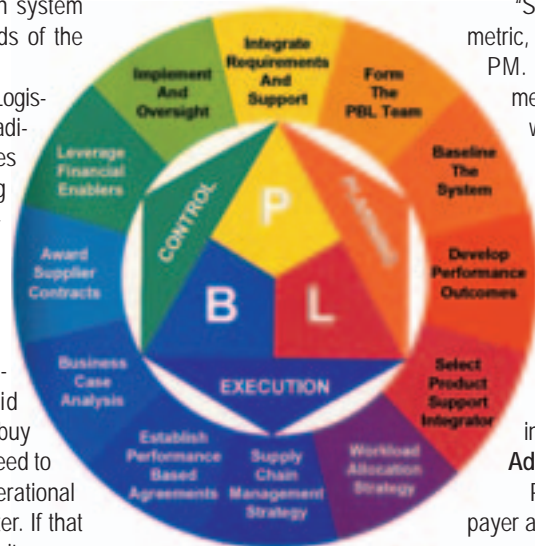


*An unidentified Soldier demonstrates the capabilities of Command Post of the Future.*

# Commander's tool takes top award

**By Philip Romanelli**
*C3T Correspondent*

Command Post of the Future has received the 2009 Network Centric Warfare (NCW) Award for Outstanding U.S. Government Program. The award, given by the Institute for Defense & Government Advancement (IDGA), was presented during the 2009 NCW Conference in Washington, D.C., Jan. 28th.

Criteria for the award include how the program incorporates the principles of network-centric warfare; objectives of the program and a technical profile; an explanation of interoperability and joint force integration within the development process; and how the program contributed to the overall effectiveness of the Warfighter.

Command Post of the Future,, a crucial element of the Army Battle Command System (ABCS), is managed by Product Manager Tactical Battle Command, headquartered

here. ABCS is the Army's foundation for command and control systems that assist Soldiers at all echelons to make better-informed decisions.

Command Post of the Future empowers Warfighters to visualize the battle space and synchronize the elements of combat power while simultaneously collaborating and sharing data in near-real time.

Command Post of the Future enables users to see and interact with each other's workspaces, tools, data, and maps as if they were interacting with their own workspace.

Command Post of the Future's central repository provides instant distribution of information to all connected users, regardless of location.

Command Post of the Future uniquely minimizes bandwidth usage by sharing only the changes to sets of data across the network, rather than the entire set of data.

This enables commanders, staffs, and geographically distributed subordinates to gain awareness of

battlefield developments as they happen, and coordinate responses to those battlefield events quickly.

The ability to share situational awareness across geographic distance and collaborate on responses to battlefield events can mean the difference between life and death.

For example, medical evacuation teams can monitor a Division's Common Operating Picture in CPOF for information on new Improvised Explosive Device (IED) events.

Command Post of the Future was initially created by the Defense Advanced Research Projects Agency (DARPA) as an effort to improve C2, with the ambitious aim of doubling the speed and quality of command-level decisions.

The Army later took over management of CPOF, and it has been used on the ground in Iraq since 2003-2004. In his keynote address to the IDGA conference, GEN Peter W. Chiarelli, the Vice-Chief of Staff of the Army, cited CPOF approvingly

for its contribution to tactical success in Iraq.

Its many capabilities include: map displays of friendly and enemy locations, plus overlays; shared workspaces with access to the information and insights of all users on network; personal workspaces – maps, tables, charts, and other planning and analysis tools; two and three dimensional map views; 3-D map time slider for virtual "rehearsal" of forces moving over time, and distributed collaboration that supports hundreds of users in real-time

LTC Richard Hornstein is the Product Manager for Tactical Battle Command. His background includes a variety of command and staff assignments from an infantryman with the 7th Infantry Division (Light), to a platoon leader in the 11th Armored Cavalry Regiment in Fulda, Germany, to a member of the NATO Implementation Force deployed to Bosnia. More recently, he served as a contingency contracting officer for deployments in Southwest Asia

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